
PROJECTNAME: MTR 903/S1L (E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/VDC-015
Depth: 0.00 m. To 5.54 m.
Box No.: 1 of 4
Date of Photograph 12-04-2012
0.00
0.46
1.02
2.49
2.99
3.79
4.84
5.54


PROJECTNAME: MTR 903/S1L (E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/VDC-015
Depth: 5.54 m. To (8.21) m.
Box No.: 2 of 4
Date of Photograph 12-04-2012
5.54
6.46
7.91
(8.21)


PROJECTNAME: MTR 903/SIL(E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/VDC-015
Depth: (8.21) m. To (12.48) m.
Box No.: 3 of 4
Date of Photograph 12-04-2012
(8.21)
9.30
9.85
10.41
11.83
12.48
(12.48)


PROJECTNAME: MTR 903/SIL(E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/VDC-015
Depth: (12.48) m. To 15.70 m.
Box No.: 4 of 4
Date of Photograph 12-04-2012
(12.48)
13.02
13.81
14.30
15.13
15.70 END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ VDC 015A
Depth : 0.00 m. To 4.24 m.
Box No. 1 of 4
Date of Photograph 20-02-2012
0.00M
0.30M
0.70M
1.20M
1.81M
2.71M
4.24M


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ VDC 015A
Depth : 4.24 m. To (7.71) m.
Box No. 2 of 4
Date of Photograph 20-02-2012
4.24M
5.71M
7.03M
(7.71M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ VDC 015A
Depth : (7.71) m. To (11.10) m.
Box No. 3 of 4
Date of Photograph 20-02-2012
(7.71M)
8.31M
8.96M
10.45M
(11.10M)

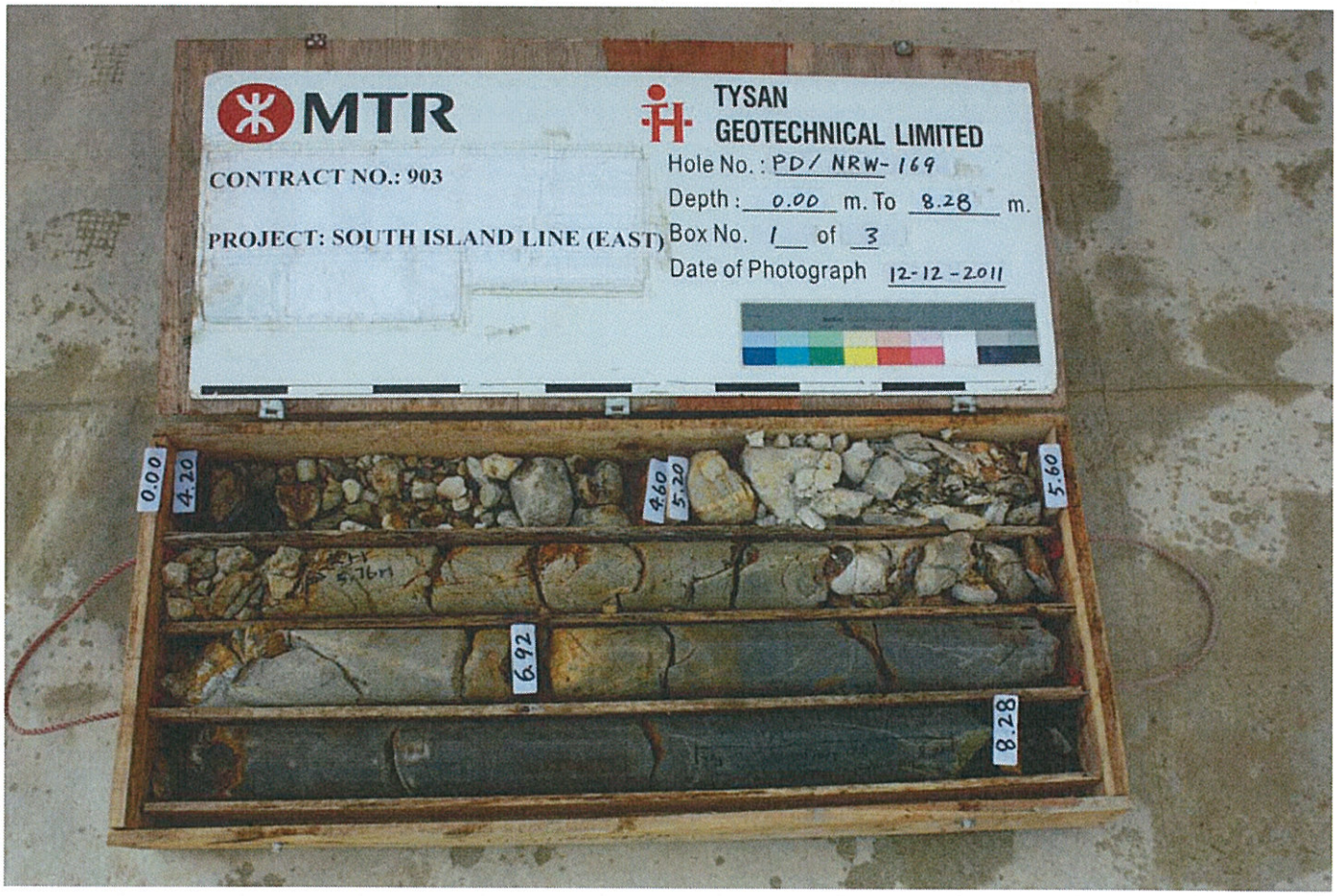

MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ VDC 015A
Depth : (11.10) m. To 14.49 m.
END
Box No. 4 of 4
Date of Photograph 20-02-2012
(11.10M)
11.98M
13.16M
14.49M END


2.16mPD
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-213
Depth : 0.00 m. To (6.48) m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. : 1 of 3
Date of Photograph 02-11-2011
0.00
0.40
1.00
1.90
2.70
3.69
3.90
4.93
6.21
(6.48)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-213
Depth : (10.10) m. To 12.92 m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. : 3 of 3
Date of Photograph 02-11-2011
(10.10)
10.33
11.53
12.48
12.92
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-213
Depth : (6.48) m. To (10.10) m.
Box No. : 2 of 3
Date of Photograph 02-11-2011
(6.48)
7.57
9.09
(10.10)


MTR 903/SIL (E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-107
Depth : (12.15) m. To 14.34 m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. : 3 of 3
Date of Photograph 02-11-2011
(12.15)
12.80
13.35
13.85
14.03
14.34 END


MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-169
Depth : 0.00 m. To 8.28 m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. 1 of 3
Date of Photograph 12-12-2011
0.00
4.20
4.60
5.20
5.60
6.92
8.28


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW- 169
Depth : 8.28 m. To (11.81) m.
Box No. 2 of 3
Date of Photograph 12-12 -2011
8.28
9.62
11.12
(11.81)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW- 169
Depth : (11.81) m. To 13.45 m.
END
Box No. 3 of 3
Date of Photograph 12-12 -2011
(11.81)
13.45
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ NRW- 170
Depth : 0.00 m. To (11.88) m.
Box No. 1 of 3
Date of Photograph 12-12-2011
0.00
6.20
7.73
8.13
8.60
9.30
9.96
10.76
11.62
(11.88)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ NRW- 170
Depth : (11.88) m. To (15.31) m.
Box No. 2 of 3
Date of Photograph 12-12-2011
(11.88)
12.60
13.01
13.79
14.71
(15.31)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW- 170
Depth : (15.31) m. To 16.76 m.
END
Box No. 3 of 3
Date of Photograph 12-12-2011
(15.31)
15.61
16.76
END

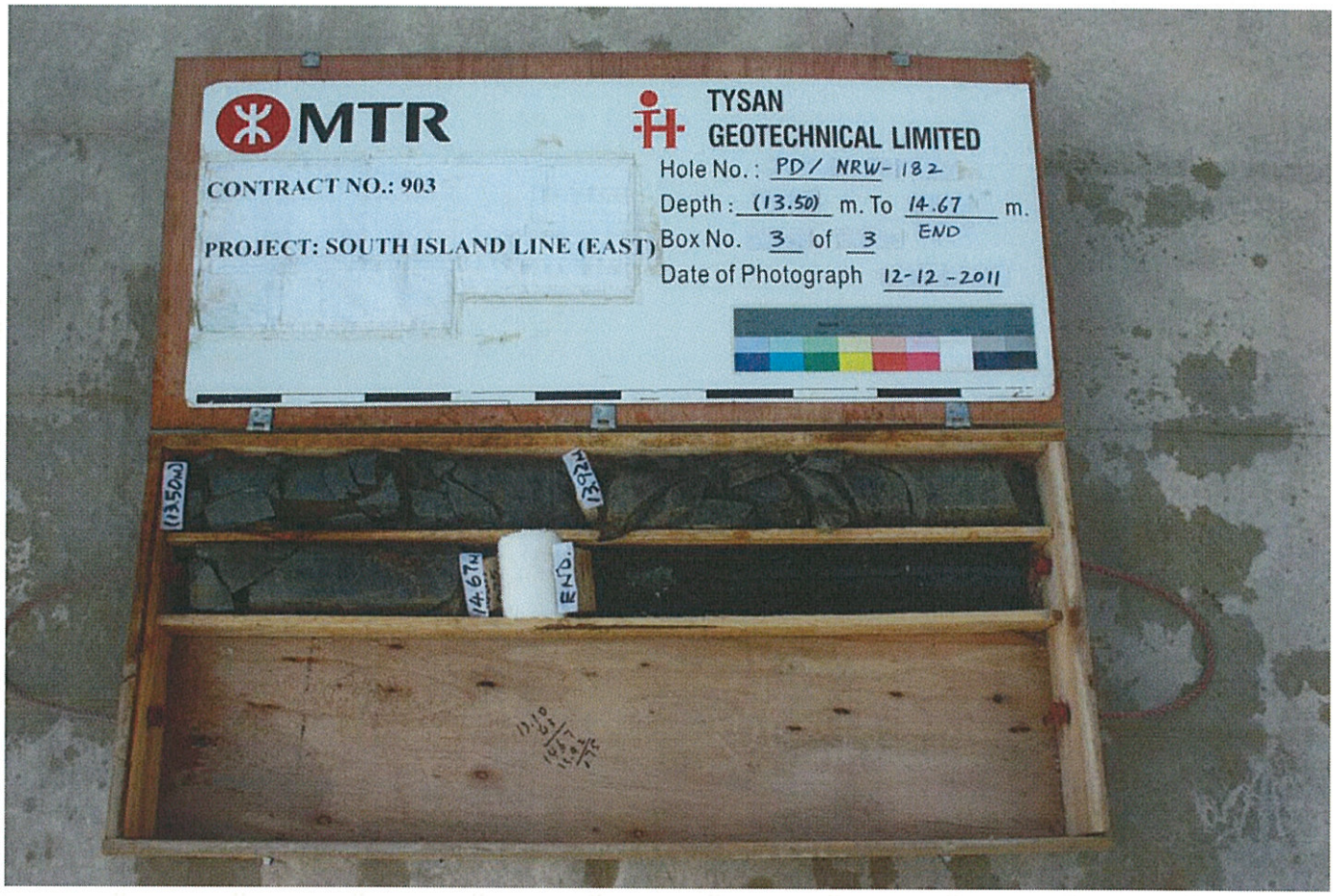

MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-171
Depth : 0.00 m. To 11.75 m.
Box No. 1 of 3
Date of Photograph 12-12-2011
0.00
8.40
8.90
9.33
9.74
10.34
1.20
11.75


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-171
Depth : 11.75 m. To (15.16) m.
Box No. 2 of 3
Date of Photograph 12-12-2011
11.75
12.81
14.08
(15.16)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-171
Depth : (15.16) m. To 18.27 m.
END
Box No. 3 of 3
Date of Photograph 12-12-2011
(15.16)
15.35
16.21
17.30
18.27
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/ NRW-182
Depth: 0.00 m. To (10.24) m.
Box No. 1 of 3
Date of Photograph 12-12-2011
0.00M
7.00M
8.64M
9.84M
9.36M
(10.24M)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/ NRW-182
Depth: (10.24) m. To (13.50) m.
Box No. 2 of 3
Date of Photograph 12-12-2011
(10.24M)
10.74M
11.58M
12.67M
13.16M
(13.50M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/ NRW-182
Depth: (13.50) m. To 14.67 m.
END
Box No. 3 of 3
Date of Photograph 12-12-2011
(13.50m)
13.72m
14.67m
END.


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/NRW-183
Depth: 0.00 m. To 8.60 m.
Box No.: 1 of 3
Date of Photograph 05-11-2011
0.00
0.30
1.00
5.60
6.83
7.66
8.11
8.60


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD- 002
Depth : 0.00 m. To (6.83) m.
Box No. 1 of 4
Date of Photograph 14-12-2011
0.00
0.60
0.72
3.10
3.85
5.15
6.37
(6.83)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD- 002
Depth : (6.83) m. To 10.19 m.
Box No. 2 of 4
Date of Photograph 14-12-2011
(6.83)
7.73
9.15
10.19


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD- 002
Depth : 10.19 m. To (13.74) m.
Box No. 3 of 4
Date of Photograph 14-12-2011
10.19
11.47
12.73
(13.74)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD- 002
Depth : (13.74) m. To 16.79 m.
Box No. 4 of 4
END
Date of Photograph 14-12-2011
(13.74)
13.83
15.02
16.12
16.79
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/ VDD-052
Depth: 0.00 m. To 4.33 m.
Box No. 1 of 5
Date of Photograph 12-12-2011
0.00M
0.00M
0.70M
2.00M
2.11M
2.43M
2.43M
1.60M
3.49M
4.33M


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/ VDD-052
Depth: 4.33 m. To (7.80) m.
Box No. 2 of 5
Date of Photograph 12-12-2011
4.33M
5.67M
6.94M
(7.80M)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-052
Depth : (7.80) m. To (11.12) m.
Box No. 3 of 5
Date of Photograph 12-12-2011
(7.80M)
8.47M
9.13M
9.95M
10.60M
(11.12M)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-052
Depth : (11.12) m. To 14.47 m.
Box No. 4 of 5
Date of Photograph 12-12-2011
(11.12M)
11.43M
12.43M
13.34M
14.47M


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-052
Depth : 14.47 m. To 16.46 m.
END
Box No. 5 of 5
Date of Photograph 12-12-2011
14.47M
15.68M
16.46M
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW- 181
Depth : 0.00 m. To (6.68) m.
Box No. 1 of 3
Date of Photograph 12-12 -2011
0.00
0.30
0.80
3.24
3.81
4.77
6.30
(6.68)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW- 181
Depth : (6.68) m. To 10.17 m.
Box No. 2 of 3
Date of Photograph 12-12 -2011
(6.68)
7.72
9.23
10.17


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-181
Depth : 10.17 m. To 12.55 m.
END
Box No. 3 of 3
Date of Photograph 12-12-2011
10.17
11.71
12.55
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129B
Depth : 0.00 m. To 3.83 m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.10
2.11
2.94
3.83


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129B
Depth : 3.83 m. To 7.43 m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
3.83
5.07
5.58
6.82
7.43


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129B
Depth : 7.43 m. To 8.07 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
7.43
8.07
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129C
Depth : 0.00 m. To (3.76) m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.28
1.46
1.94
3.11
(3.76)
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129C
Depth : (3.76) m. To (7.36) m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
(3.76)
4.05
5.30
5.88
7.00
(7.36)
PD/NRW-129C


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129C
Depth : (7.36) m. To 9.38 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
(7.36)
7.84
8.39
9.38
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129D
Depth : 0.00 m. To 2.88 m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.10
1.63
2.37
2.88
MTR SIL (E) 903
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129D
Depth : 2.88 m. To 6.35 m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
2.88
3.76
4.88
6.35


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129D
Depth : 6.35 m. To 7.54 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
6.35
7.54
END
7.98
7.56
7.96
7.54
6.35
1.19


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129E
Depth : 0.00 m. To 3.66 m.
Box No.: 1 of 4
Date of Photograph 26-11-2012
0.00
0.50
1.30
1.95
3.26
3.66
MTR SIL(E) 903
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129E
Depth : 3.66 m. To 7.26 m.
Box No.: 2 of 4
Date of Photograph 26-11-2012
3.66
4.40
4.96
6.07
7.26


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129E
Depth : 7.26 m. To (10.69) m.
Box No.: 3 of 4
Date of Photograph 26-11-2012
7.26
8.34
9.76
(10.69)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129E
Depth : (10.69) m. To 11.35 m.
Box No.: 4 of 4 END
Date of Photograph 26-11-2012
(10.69)
10.79
11.35
END


MTR SIL(E) 903
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-129F
Depth : 0.00 m. To (4.31) m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.30
1.95
3.05
3.68
(4.31)
MTR SIL(E) 903
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-129F
Depth : (4.31) m. To (7.66) m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
(4.31)
4.43
5.00
5.98
6.64
(7.66)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129F
Depth : (7.66) m. To 9.53 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
(7.66)
7.78
8.90
9.53
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-062
Depth : 0.00 m. To 8.24 m.
Box No. 1 of 3
Date of Photograph 10-12-2011
0.00
0.65
1.00
4.82
5.52
7.00
8.24


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-062
Depth : 8.24 m. To 11.95 m.
Box No. 2 of 3
Date of Photograph 10-12-2011
8.24
9.59
11.11
11.95


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-062
Depth : 11.95 m. To 12.98 m.
END
Box No. 3 of 3
Date of Photograph 10-12-2011
11.95
12.98
END


PROJECT NAME : MTR 903 / SIL (E)
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-129A
Depth : 0.00 m. To 4.35 m.
Box No. : 1 of 3
Date of Photograph . 23-08-2011
0.00
0.35
1.60
2.00
3.10
3.42
3.86
4.35


PROJECT NAME: NTP /903 SIGCD
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-129A
Depth : 4.35 m. To 8.05 m.
Box No. : 2 of 3
Date of Photograph . 23-08-2011
Kodak Color Control Patches
4.35
4.64
5.78
7.03
8.05


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-129A
Depth : 8.05 m. To 9.15 m.
Box No. : 3 of 3
Date of Photograph . 23-08-2011
8.05
8.78
9.15
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-217
Depth : 000 m. To (7.42) m.
Box No. : 1 of 3
Date of Photograph 02-11-2011
000
0.35
1.85
2.50
5.68
R.H.
5.68m
6.71
(7.42)
(7.42)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-217
Depth : (7.42) m. To 10.99 m.
Box No. : 2 of 3
Date of Photograph 02-11-2011
(7.42)
7.96
10.99


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW-217
Depth : 10.99 m. To 12.18 m.
Box No. : 3 of 3
Date of Photograph 02-11-2011
10.99
12.18
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-230
Depth : 0.00 m. To (5.79) m.
Box No. : 1 of 3
Date of Photograph 02-11-2011
0.00
0.63
1.88
2.79
4.00
5.50
(5.79)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-230
Depth : (5.79) m. To (9.64) m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. : 2 of 3
Date of Photograph 02-11-2011
(5.79)
6.93
8.47
(9.64)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-230
Depth : (9.64) m. To 11.20 m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. : 3 of 3
Date of Photograph 02-11-2011
(9.64)
10.01
11.20
END


PROJECT NAME: MTR 903 SIL E
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-059
Depth : 0.00 m. To (7.16) m.
Box No. 1 of 3
Date of Photograph 10-12-2011
0.00
0.36
0.46
2.74
2.99
3.88
4.41
4.98
6.36
(7.16)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-059
Depth : (7.16) m. To 10.64 m.
Box No. 2 of 3
Date of Photograph 10-12-2011
(7.16)
7.76
9.18
10.64


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-059
Depth : 10.64 m. To 12.01 m.
END
Box No. 3 of 3
Date of Photograph 10-12-2011
10.64
10.97
12.01
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/NRW-060
Depth: 0.00 m. To 7.22 m.
Box No.: 1 of 4
Date of Photograph 25-07-2012
11:00AM
0.00
0.25
0.50
2.57
2.90
4.18
4.48
5.14
5.46
6.09
7.22


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/NRW-060
Depth: 7.22 m. To 10.89 m.
Box No.: 2 of 4
Date of Photograph 25-07-2012
7.22
7.84
8.36
9.70
10.89


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-060
Depth : 1089 m. To 1414 m.
Box No.: 3 of 4
Date of Photograph 25-07-2012
1089
1182
1329
1414


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-060
Depth : 1414 m. To 1482 m.
Box No.: 4 of 4
Date of Photograph 25-07-2012
1414
1482
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/NRW-062A
Depth: 0.00 m. To (5.80) m.
Box No.: 1 of 3
Date of Photograph 25-07-2012
0.00
0.20
0.70
1.30
2.25
3.19
3.59
4.81
(5.80)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/NRW-062A
Depth: (5.80) m. To 9.49 m.
Box No.: 2 of 3
Date of Photograph 25-07-2012
(5.80)
6.32
6.65
7.71
8.19
8.79
9.49


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No.: PD/NRW-062A
Depth: 9.49 m. To 12.82 m.
Box No.: 3 of 3
Date of Photograph 25-07-2012
9.49
10.30
11.63
12.82 END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-063
Depth : 0.00 m. To (6.88) m.
Box No. 1 of 3
Date of Photograph 10-12-2011
0.00
0.40
0.65
1.88
2.98
3.66
4.23
5.06
5.40
5.96
6.22
6.56
(6.88)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-063
Depth : (6.88) m. To (10.40) m.
Box No. 2 of 3
Date of Photograph 10-12-2011
(6.88)
7.90
9.19
(10.40)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-063
Depth : (10.40) m. To 12.97 m.
END
Box No. 3 of 3
Date of Photograph 10-12-2011
(10.40)
10.70
11.90
12.97
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW 200
Depth : 0.00 m. To (10.99) m.
Box No. 1 of 3
Date of Photograph 11-02-2012
0.00M
0.50M
1.10M
7.09M
7.47M
7.85
8.40M
9.37M
9.75M
10.02M
(10.99M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW 200
Depth : (10.99) m. To (15.72) m.
Box No. 2 of 3
Date of Photograph 11-02-2012
(10.99M)
11.58M
12.89M
13.35M
14.72M
(15.72M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW 200
Depth : (15.72) m. To 17.67 m.
END
Box No. 3 of 3
Date of Photograph 11-02-2012
(15.72m)
16.1m
17.67m
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW201
Depth : 0.00 m. To (10.29) m.
Box No. 1 of 4
Date of Photograph 16-02-2012
0.00M
6.40M
6.97M
8.50M
9.45M
(10.29M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW201
Depth : (10.29) m. To (14.00) m.
Box No. 2 of 4
Date of Photograph 16-02-2012
(10.29M)
10.97M
12.50M
(14.00M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW201
Depth : (14.00) m. To (17.54) m.
Box No. 3 of 4
Date of Photograph 16-02-2012
(14.00m)
14.05m
15.53m
17.04m
(17.54m)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW201
Depth : (17.54) m. To 18.59 m.
END
Box No. 4 of 4
Date of Photograph 16-02-2012
(17.54m)
18.59m
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No.: PD/NRW-218
Depth: 0.00 m. To 5.73 m.
Box No.: 1 of 2
Date of Photograph 12-07-2012
0.00
0.15
0.65
3.03
4.34
5.73


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No.: PD/NRW-218
Depth: 5.73 m. To 8.60 m.
Box No.: 2 of 2
Date of Photograph 12-07-2012
5.73
7.03
8.60 END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-231
Depth : 0.00 m. To 8.56 m.
Box No.: 1 of 2
Date of Photograph 12-07-2012
0.00
0.53
4.89
5.19
6.14
7.60
8.56


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-231
Depth : 8.56 m. To 12.14 m.
Box No.: 2 of 2
Date of Photograph 12-07-2012
8.56
9.14
10.68
12.14
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ VDC- 008
Depth : (29.80) m. To 32.94 m.
END
Box No. 5 of 5
Date of Photograph 05-12-2011
(29.80m)
30.32m
31.52m
32.94m
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ VDC 009
Depth : 0.00 m. To (15.34) m.
Box No. 1 of 3
Date of Photograph 11-1-2012
0.00m
1.00m
1.49m
1.81m
2.05m
12.58m
14.10m
(15.34m)


PROJECT NAME : MTR903/SIL(E)
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/VDC 009
Depth : (15.34) m. To 18.69 m.
Box No. 2 of 3
Date of Photograph 11-1-2012
15.34M
15.84M
17.17M
18.69M


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/VDC 009
Depth : 18.69 m. To 20.18 m.
END
Box No. 3 of 3
Date of Photograph 11-1-2012
18.69M
20.18M
END

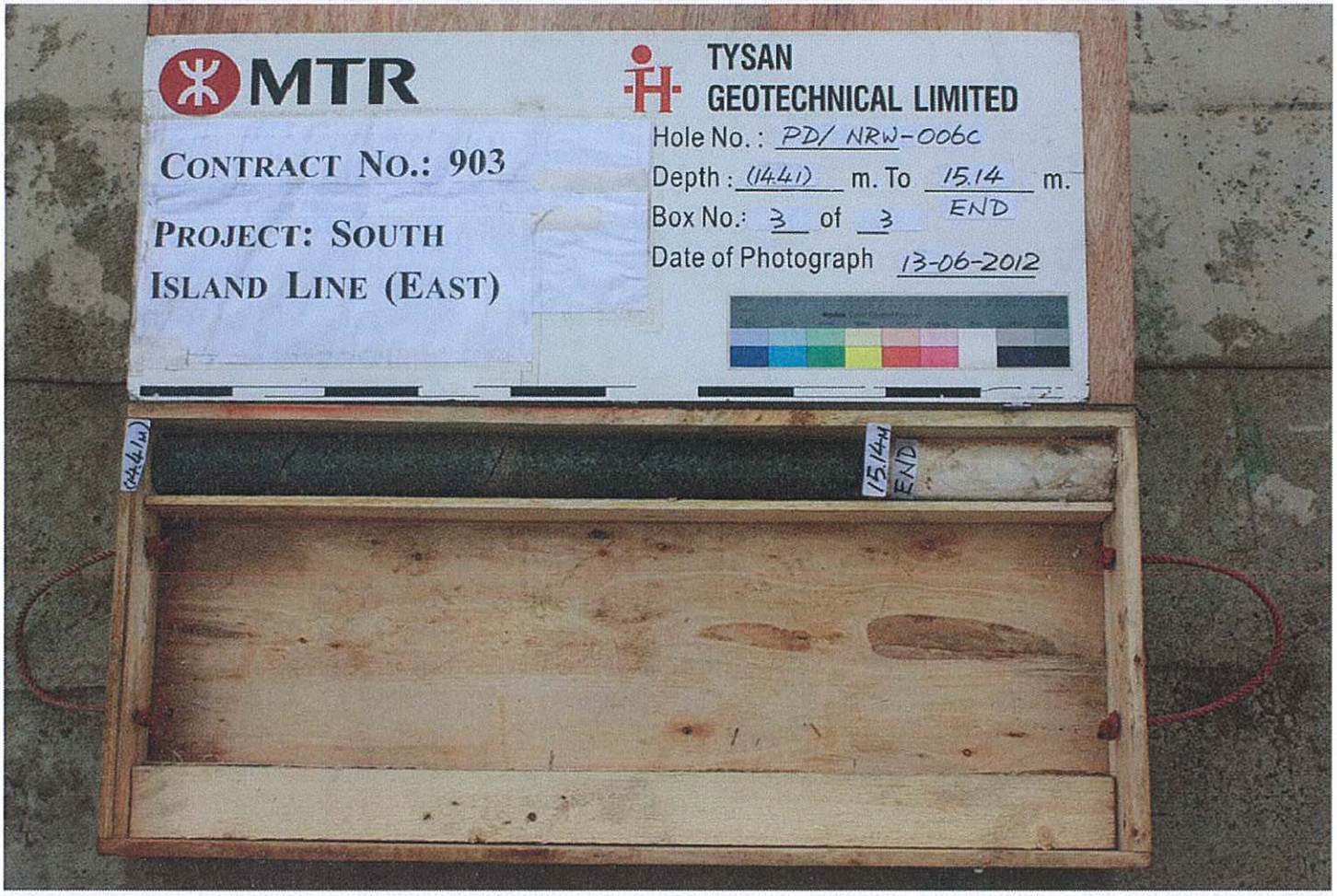

10:00 AM
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
Hole No.: PD/VDC-021
Depth: 0.00 m. To 7.89 m.
Box No.: 1 of 3
Date of Photograph 25-07-2012
0.25
0.75
1.60
2.70
5.80
7.15
7.89


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
Hole No.: PD/VDC-021
Depth: 7.89 m. To (11.24) m.
Box No.: 2 of 3
Date of Photograph 25-07-2012
7.89
9.31
10.81
(11.24)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/VDC-021
Depth : (11.24) m. To 13.69 m.
Box No.: 3 of 3
Date of Photograph 25-07-2012
(11.24)
11.86
12.73
13.04
13.69
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/ NRW-006C
Depth : 0.00 m. To 9.98 m.
Box No.: 1 of 3
Date of Photograph 13-06-2012
0.00M
0.50M
1.20M
7.15M
8.52M
9.98M


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/ NRW-006C
Depth : 9.98 m. To (14.41) m.
Box No.: 2 of 3
Date of Photograph 13-06-2012
9.98M
11.00M
12.49M
13.11M
13.61M
(14.41M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
Hole No.: PD/NRW-006C
Depth: (14.41) m. To 15.14 m.
END
Box No.: 3 of 3
Date of Photograph 13-06-2012
(14.41)
15.14
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-056
Depth : 0.00 m. To (10.32) m.
Box No. : 1 of 4
Date of Photograph . 06-08-2011
0.00
2.70
3.00
6.17
7.14
7.76
8.36
8.88
10.08
(10.32)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-056
Depth : (10.32) m. To 16.27 m.
Box No. : 2 of 4
Date of Photograph . 06-08-2011
(10.32)
10.75
13.10
13.60
14.57
15.56
16.27


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-056
Depth : 16.27 m. To 19.37 m.
Box No. : 3 of 4
Date of Photograph . 06-08-2011
16.27
17.01
17.84
19.37


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-056
Depth : 19.37 m. To 20.56 m.
Box No. : 4 of 4
Date of Photograph . 06-08-2011
19.37
20.56
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-058
Depth : 0.00 m. To 7.54 m.
Box No. 1 of 4
Date of Photograph 05-12-2011
0.00M
1.90M
2.50M
2.90M
3.80M
5.19M
6.59M
7.54M


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-058
Depth : 7.54 m. To 11.15 m.
Box No. 2 of 4
Date of Photograph 05-12-2011
7.54M
8.88M
10.41M
11.15M


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-058
Depth : 11.15 m. To 16.75 m.
Box No. 3 of 4
Date of Photograph 05-12-2011
11.15M
12.01M
12.56M
13.25M
14.63M
15.00M
15.28M
16.75M


MTR/903-SIL(E)
MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/NRW-058
Depth : 16.75 m. To 21.51 m.
END
Box No. 4 of 4
Date of Photograph 05-12-2011
16.75M
18.21M
19.74M
20.56M
21.51M
END.


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/NRW-061
Depth: 0.00 m. To 9.69 m.
Box No.: 1 of 3
Date of Photograph 25-07-2012
0.00
3.70
4.30
5.20
5.60
6.70
7.68
8.60
9.69


MTR
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No.: PD/NRW-061
Depth: 9.69 m. To 13.33 m.
Box No.: 2 of 3
Date of Photograph 25-07-2012
9.69
10.58
11.60
12.79
13.33


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH
ISLAND LINE (EAST)
Hole No. : PD/NRW-061
Depth : 13.33 m. To 16.80 m.
Box No.: 3 of 3
Date of Photograph 25-07-2012
13.33
13.82
15.24
16.80
END


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW 064A
Depth : 0.00 m. To (10.22) m.
Box No. 1 of 3
Date of Photograph 28-01-2012
0.00M
1.76M
2.16M
4.91M
5.11M
5.64M
6.17M
7.07M
7.48M
9.02M
RH
9.50M
9.68M
(10.22M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW 064A
Depth : (10.22) m. To (13.57) m.
Box No. 2 of 3
Date of Photograph 28-01-2012
(10.22M)
(10.22M)
10.85M
11.21M
12.51M
(13.57M)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/ NRW 064A
Depth : (13.57) m. To 16.01 m.
END
Box No. 3 of 3
Date of Photograph 28-01-2012
13.57M
13.57M
13.89M
15.32M
16.01M
END


MTR SIL(E) 903
MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-129F
Depth : 0.00 m. To (4.31) m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.30
1.95
3.05
3.68
(4.31)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-129F
Depth : (4.31) m. To (7.66) m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
(4.31)
4.43
5.00
5.98
6.64
(7.66)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-129F
Depth : (7.66) m. To 9.53 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
(7.66)
7.78
8.90
9.53 END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-168
Depth : 0.00 m. To 4.30 m.
Box No. 1 of 3
Date of Photograph 04-01-2013
0.00
0.30
1.04
2.47
3.01
3.35
3.95
4.30


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-168
Depth : 4.30 m. To 7.89 m.
Box No. 2 of 3
Date of Photograph 04-01-2013
4.30
5.37
6.47
7.89


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-168
Depth : 7.89 m. To 9.34 m.
Box No. 3 of 3 END
Date of Photograph 04-01-2013
7.89
8.22
9.34 END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-129C
Depth : 0.00 m. To (3.76) m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.28
1.46
1.94
3.11
(3.76)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-129C
Depth : (3.76) m. To (7.36) m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
(3.76)
4.05
5.30
5.88
7.00
(7.36)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-129C
Depth : (7.36) m. To 9.38 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
(7.36)
7.84
8.39
9.38
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-051
Depth : 0.00 m. To 5.38 m.
Box No. 1 of 4
Date of Photograph 24-12-2011
0.00M
1.50M
2.75M
3.55M
4.72M
5.38M


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-051
Depth : 5.38 m. To (8.67) m.
Box No. 2 of 4
Date of Photograph 24-12-2011
5.38M
6.09M
7.00M
8.48M
(8.67M)


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-051
Depth : (8.67) m. To 12.01 m.
Box No. 3 of 4
Date of Photograph 24-12-2011
(8.67M)
9.04M
9.97M
11.10M
12.01M


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/ VDD-051
Depth : 12.01 m. To 13.79 m.
END
Box No. 4 of 4
Date of Photograph 24-12-2011
12.01M
12.84M
13.00M
13.79M
END


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-108
Depth : 0.00 m. To 6.69 m.
Box No.: 1 of 3
Date of Photograph 26-11-2012
0.00
1.70
3.70
4.50
4.80
5.50
5.69
6.69


MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN GEOTECHNICAL LIMITED
Hole No. : PD/NRW-108
Depth : 6.69 m. To (10.41) m.
Box No.: 2 of 3
Date of Photograph 26-11-2012
6.69
7.79
9.11
9.94
(10.41)


MTR SIL (E) 903
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND
LINE (EAST)
Hole No. : PD/NRW-108
Depth : (10.41) m. To 11.19 m.
Box No.: 3 of 3 END
Date of Photograph 26-11-2012
10.41
10.91
11.19
END

PD/NRW-001


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/NRW-001
Depth: 0.00 m. To (13.30) m.
Box No.: 1 of 3
Date of Photograph. 11-08-2011
0.00
0.50
1.50
2.50
3.50
4.80
10.82
11.40
12.89
(13.30)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/NRW-001
Depth: (13.30) m. To (17.07) m.
Box No.: 2 of 3
Date of Photograph. 11-08-2011
(13.30)
14.26
15.81
(17.07)

PD/NRW-001


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-001
Depth : (17.07) m. To 19.78 m.
Box No. : 3 of 3
Date of Photograph . 11-08-2011
(17.07)
17.35
18.81
19.78
END

PD/NRW-038


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-038
Depth : 0.00 m. To 14.19 m.
Box No. : 1 of 3
Date of Photograph 01-11-2011


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-038
Depth : 14.19 m. To 17.62 m.
Box No. : 2 of 3
Date of Photograph 01-11-2011

PD/NRW-038


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-038
Depth : 1762 m. To 2118 m.
Box No. : 3 of 3
Date of Photograph 01-11-2011
1762
1904
2054
2118
END

PD/NRW-041


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-041
Depth : 0.00 m. To 14.97 m.
Box No. : 1 of 3
Date of Photograph . 24-08-2011


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-041
Depth : 14.97 m. To 18.33 m.
Box No. : 2 of 3
Date of Photograph . 24-08-2011

PD/NRW-041


GL: + 6.74 mPD
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
Hole No. : PD/NRW-041
Depth : 18.33 m. To 21.82 m.
PROJECT: SOUTH ISLAND LINE (EAST)
Box No. : 3 of 3
Date of Photograph . 24-08-2011
18.33
19.36
20.86
21.82 END

PD/NRW-041A


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-041A
Depth : 0.00 m. To 17.36 m.
Box No. : 1 of 2
Date of Photograph . 23-08-2011
0.00
2.00
2.64
3.12
14.74
15.33
16.12
17.36


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-041A
Depth : 17.36 m. To 21.12 m.
Box No. : 2 of 2
Date of Photograph . 23-08-2011
17.36
18.91
20.46
21.12
END

PD/NRW-045


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-045
Depth: 0.00 m. To 14.10 m.
Box No.: 1 of 4
Date of Photograph. 06-08-2011
0.00
1.62
2.15
2.50
3.95
4.37
5.70
6.00
11.29
11.69
12.22
12.85
14.10


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-045
Depth: 14.10 m. To 17.37 m.
Box No.: 2 of 4
Date of Photograph. 06-08-2011
14.10
14.88
15.49
15.87
16.63
17.37

PD/NRW-045


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-045
Depth: 17.37 m. To 20.61 m.
Box No.: 3 of 4
Date of Photograph. 06-08-2011
17.37
17.65
18.39
19.57
20.03
20.61


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-045
Depth: 20.61 m. To 22.40 m.
Box No.: 4 of 4
Date of Photograph. 06-08-2011
20.61
21.11
22.40
END

PD/NRW-048


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-048
Depth: 0.00 m. To 11.90 m.
Box No.: 1 of 3
Date of Photograph. 08-08-2011
0.00
1.48
1.91
2.02
8.79
9.53
11.07
11.90


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-048
Depth: 11.90 m. To (15.41) m.
Box No.: 2 of 3
Date of Photograph. 08-08-2011
11.90
12.65
14.14
(15.41)

PD/NRW-048


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-048
Depth : (15.41) m. To 17.25 m.
Box No. : 3 of 3
Date of Photograph . 08-08-2011
(15.41)
15.63
16.39
17.25
END

PD/NRW-051


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-051
Depth: 0.00 m. To 12.02 m.
Box No.: 1 of 3
Date of Photograph. 08-08-2011
0.00
0.50
2.00
2.00
9.52
10.30
10.55
12.02


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-051
Depth: 12.02 m. To (15.62) m.
Box No.: 2 of 3
Date of Photograph. 08-08-2011
12.02
13.12
14.64
(15.62)

PD/NRW-051


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-051
Depth : (15.62) m. To 18.31 m.
Box No. : 3 of 3
Date of Photograph . 08-08-2011
(15.62)
16.12
17.60
18.31
END

PD/NRW-064


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/NRW-064
Depth: 0.00 m. To (10.41) m.
Box No.: 1 of 3
Date of Photograph. 10-08-2011
0.00
1.20
1.50
2.50
7.65
8.37
9.37
9.97
(10.41)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No.: PD/NRW-064
Depth: (10.41) m. To (13.94) m.
Box No.: 2 of 3
Date of Photograph. 10-08-2011
(10.41)
11.50
13.02
(13.94)

PD/NRW-064


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-064
Depth : (13.94) m. To 16.14 m.
Box No. : 3 of 3
Date of Photograph . 10-08-2011
(13.94)
14.57
16.14
END

PD/NRW-073


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-073
Depth : 0.00 m. To 7.77 m.
Box No. : 1 of 4
Date of Photograph . 10-08-2011
0.00
0.42
1.50
1.80
3.30
4.10
5.60
5.90
6.50
7.18
7.77


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-073
Depth : 7.77 m. To (11.30) m.
Box No. : 2 of 4
Date of Photograph . 10-08-2011
7.77
8.75
9.37
10.19
(11.30)

PD/NRW-073


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-073
Depth: (11.30) m. To 14.64 m.
Box No.: 3 of 4
Date of Photograph. 10-08-2011
(11.30)
11.92
13.37
13.77
14.64


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-073
Depth: 14.64 m. To 16.10 m.
Box No.: 4 of 4
Date of Photograph. 10-08-2011
14.64
15.47
16.10
END

PD/NRW-075


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-075
Depth : 0.00 m. To (8.81) m.
Box No. : 1 of 3
Date of Photograph . 10-08-2011
0.00
1.20
1.40
2.00
2.10
2.90
3.54
4.30
4.65
4.85
5.02
5.09
5.49
8.15
(8.81)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-075
Depth : (8.81) m. To 12.34 m.
Box No. : 2 of 3
Date of Photograph . 10-08-2011
(8.81)
9.65
10.95
12.34

PD/NRW-075


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-075
Depth: 12.34 m. To 15.77 m.
Box No.: 3 of 3
Date of Photograph. 10-08-2011
12.34
13.57
14.96
15.77
END

PD/NRW-075A


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-075A
Depth : 0.00 m. To 10.83 m.
Box No. : 1 of 2
Date of Photograph 04-11-2011
0.00
4.30
4.80
7.96
9.03
9.90
10.83


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/NRW-075A
Depth : 10.83 m. To 14.34 m.
Box No. : 2 of 2
Date of Photograph 04-11-2011
10.83
12.13
13.48
14.34
END

PD/NRW-077


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-077
Depth : 0.00 m. To 9.64 m.
Box No. : 1 of 3
Date of Photograph . 09-08-2011
0.00
1.30
1.60
1.80
2.40
2.84
3.44
4.04
4.84
8.54
9.64


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-077
Depth : 9.64 m. To (13.13) m.
Box No. : 2 of 3
Date of Photograph . 09-08-2011
9.64
10.91
12.37
(13.13)

PD/NRW-077


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-077
Depth : (13.13) m. To 14.83 m.
Box No. : 3 of 3
Date of Photograph . 09-08-2011
(13.13)
13.73
14.83
END

PD/NRW-079


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-079
Depth : 0.00 m. To (8.67) m.
Box No. : 1 of 3
Date of Photograph . 09-08-2011
0.00
1.57
2.47
3.27
4.03
7.21
7.53
(8.67)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-079
Depth : (8.67) m. To 12.11 m.
Box No. : 2 of 3
Date of Photograph . 09-08-2011
(8.67)
9.04
RH 8.8m
10.53
11.44
12.11

PD/NRW-079


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-079
Depth : 12.11 m. To 14.82 m.
Box No. : 3 of 3
Date of Photograph . 09-08-2011
12.11
13.61
14.82
END

PD/NRW-081


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-081
Depth : 0.00 m. To 10.18 m.
Box No. : 1 of 3
Date of Photograph . 08-08-2011
0.00
1.25
1.60
6.50
7.30
8.22
8.94
10.18


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-081
Depth : 10.18 m. To 13.71 m.
Box No. : 2 of 3
Date of Photograph . 08-08-2011
10.18
10.49
11.63
12.74
13.71

PD/NRW-081


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-081
Depth : 13.71 m. To 15.01 m.
Box No. : 3 of 3
Date of Photograph . 08-08-2011
13.71
14.24
15.01
END

PD/NRW-083


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-083
Depth : 0.00 m. To (4.92) m.
Box No. : 1 of 4
Date of Photograph . 10-08-2011
0.00
1.00
1.70
1.96
2.28
3.64
(4.92)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-083
Depth : (4.92) m. To (8.45) m.
Box No. : 2 of 4
Date of Photograph . 10-08-2011
(4.92)
5.20
6.67
7.62
8.06
(8.45)

PD/NRW-083


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-083
Depth : (8.45) m. To 12.03 m.
Box No. : 3 of 4
Date of Photograph . 10-08-2011
(8.45)
9.12
9.63
10.40
10.90
12.03


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-083
Depth : 12.03 m. To 14.49 m.
Box No. : 4 of 4
Date of Photograph . 10-08-2011
12.03
12.63
13.79
14.49
END

PD/NRW-084


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084
Depth : 0.00 m. To (7.55) m.
Box No. : 1 of 4
Date of Photograph . 09-08-2011
0.00
3.71
4.35
4.70
4.93
6.45
(7.55)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084
Depth : (7.55) m. To 11.00 m.
Box No. : 2 of 4
Date of Photograph . 09-08-2011
(7.55)
7.90
8.81
9.53
10.22
11.00

PD/NRW-084


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084
Depth : 11.00 m. To (14.37) m.
Box No. : 3 of 4
Date of Photograph . 09-08-2011
11.00
11.68
12.14
12.64
13.24
13.59
13.92
(14.37)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084
Depth : (14.37) m. To 14.80 m.
Box No. : 4 of 4
Date of Photograph . 09-08-2011
(14.37)
14.80
END

PD/NRW-084A


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084A
Depth : 0.00 m. To 8.09 m.
Box No. : 1 of 3
Date of Photograph . 09-08-2011
0.00
4.54
5.98
7.41
8.09


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084A
Depth : 8.09 m. To (11.50) m.
Box No. : 2 of 3
Date of Photograph . 09-08-2011
8.09
8.88
9.71
10.40
(11.50)

PD/NRW-084A


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084A
Depth : (11.50) m. To 13.72 m.
Box No. : 3 of 3
Date of Photograph . 09-08-2011
(11.50)
11.57
12.10
13.11
13.72 END

PD/NRW-102


PROJECT NAME: MTR 903/SIL(E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-102
Depth: 0.00 m. To 5.10 m.
Box No.: 1 of 3
Date of Photograph. 05-08-2011
0.00
0.50
0.80
1.30
1.90
2.30
2.90
3.45
3.80
4.40
5.10


PROJECT NAME: MTR 903/SIL(E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/NRW-102
Depth: 5.10 m. To (15.42) m.
Box No.: 2 of 3
Date of Photograph. 05-08-2011
5.10
11.68
13.07
14.57
(15.42)

PD/NRW-102


PROJECT NAME MTR 903 KIL (E)
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-102
Depth : (15.42) m. To 18.00 m.
Box No. : 3 of 3
Date of Photograph . 05-08-2011
(15.42)
15.93
16.93
18.00
END

PD/VDC-018


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/VDC-018
Depth : 0.00 m. To 11.73 m.
Box No. : 1 of 5
Date of Photograph . 06-08-2011
0.00
1.20
1.85
2.55
2.84
8.19
8.68
9.60
10.83
11.73


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/VDC-018
Depth : 11.73 m. To 15.21 m.
Box No. : 2 of 5
Date of Photograph . 06-08-2011
11.73
13.17
14.37
15.21

PD/VDC-018


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/VDC-018
Depth: 15.21 m. To 18.12 m.
Box No.: 3 of 5
Date of Photograph. 06-08-2011
15.21
16.25
17.14
18.12


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/VDC-018
Depth: 18.12 m. To 21.49 m.
Box No.: 4 of 5
Date of Photograph. 06-08-2011
18.12
18.85
19.81
20.67
21.49

PD/VDC-018


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/VDC-018
Depth: 21.49 m. To 22.71 m.
Box No.: 5 of 5
Date of Photograph. 06-08-2011
21.49
22.07
22.71
END

PD/WCH-056


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-056
Depth : 0.00 m. To 11.74 m.
Box No. : 1 of 3
Date of Photograph . 11-08-2011
0.00
0.70
1.35
2.50
3.60
7.50
7.90
9.94
10.84
11.74


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-056
Depth : 11.74 m. To (15.24) m.
Box No. : 2 of 3
Date of Photograph . 11-08-2011
11.74
12.57
13.83
(15.24)

PD/WCH-056


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-056
Depth : (15.24) m. To 18.10 m.
Box No. : 3 of 3
Date of Photograph . 11-08-2011
(15.24)
15.39
16.63
18.10
END

PD/WCH-058


PROJECT NAME: MTR 903 SIL(E)
MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/WCH-058
Depth : 0.00 m. To 11.58 m.
Box No. : 1 of 4
Date of Photograph . 24-08-2011
0.00
0.91
1.21
1.71
2.08
3.33
4.03
9.42
10.22
10.58
11.58


PROJECT NAME: MTR 903 SIL(E)
MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/WCH-058
Depth : 11.58 m. To (15.07) m.
Box No. : 2 of 4
Date of Photograph . 24-08-2011
11.58
13.06
14.53
(15.07)

PD/WCH-058


PROJECT NAME: MTR903/SIL(E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-058
Depth : (15.07) m. To (18.71) m.
Box No. : 3 of 4
Date of Photograph . 24-08-2011
(15.07)
15.90
17.05
18.21
(18.71)


PROJECT NAME: MTR903/SIL(E)
MTR
TYSAN GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-058
Depth : (18.71) m. To 19.23 m.
Box No. : 4 of 4
Date of Photograph . 24-08-2011
(18.71)
19.23
END

PD/WCH-059


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH -059
Depth : 0.00 m. To (11.75) m.
Box No. : 1 of 3
Date of Photograph . 10-08-2011
0.00
0.80
1.20
1.50
1.76
4.21
4.76
9.56
9.76
11.21
(11.75)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH -059
Depth : (11.75) m. To (15.36) m.
Box No. : 2 of 3
Date of Photograph . 10-08-2011
(11.75)
12.59
14.12
(15.36)

PD/WCH-059


PROJECT NAME : MTR 903 (SIL(E))
MTR
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
TYSAN
GEOTECHNICAL LIMITED
Hole No. : PD/WCH-059
Depth : (15.36) m. To 18.28 m.
Box No. : 3 of 3
Date of Photograph . 10-08-2011
(15.36)
15.56
16.80
18.28
END

PD/WCH-061


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-61
Depth : 000 m. To 602 m.
Box No. : 1 of 4
Date of Photograph . 24-08-2011
0.00
0.42
0.72
0.97
1.13
1.70
2.14
3.00
3.50
4.10
4.60
5.44
6.02


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-61
Depth : 6.02 m. To 12.81 m.
Box No. : 2 of 4
Date of Photograph . 24-08-2011
9.32m
6.02
9.32
10.22
11.67
12.81

PD/WCH-061


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-61
Depth : 12.81 m. To 16.36 m.
Box No. : 3 of 4
Date of Photograph . 24-08-2011
12.81
13.24
14.74
16.36


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-61
Depth : 16.36 m. To 19.97 m.
Box No. : 4 of 4
Date of Photograph . 24-08-2011
16.36
17.74
19.32
19.97
END

PD/WCH-052


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/WCH-052
Depth : 0.00 m. To 14.56 m.
Box No. : 1 of 3
Date of Photograph . 06-08-2011
0.00
4.50
4.80
11.27
11.89
13.10
14.56


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/WCH-052
Depth : 14.56 m. To (18.13) m.
Box No. : 2 of 3
Date of Photograph . 06-08-2011
14.56
16.05
17.60
(18.13)

PD/WCH-052


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/WCH-052
Depth: (18.13) m. To 20.42 m.
Box No.: 3 of 3
Date of Photograph. 06-08-2011
(18.13)
19.10
20.42
END

PD/WCH-053


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/WCH-053
Depth: 0.00 m. To (13.87) m.
Box No.: 1 of 3
Date of Photograph. 08-08-2011
0.00
0.50
10.74
11.38
12.88
(13.87)


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No.: PD/WCH-053
Depth: (13.87) m. To (17.52) m.
Box No.: 2 of 3
Date of Photograph. 08-08-2011
(13.87)
14.34
14.68
16.11
(17.52)

PD/WCH-053


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/WCH-053
Depth : (17.52) m. To 19.16 m.
Box No. : 3 of 3
Date of Photograph . 08-08-2011
(17.52)
17.60
19.16
END

PD/WCH-055


PROJECT NAME MTR 903
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-055
Depth : 0.00 m. To 12.29 m.
Box No. : 1 of 3
Date of Photograph . 11-08-2011
0.00
0.80
1.30
1.85
2.50
3.30
10.15
10.85
12.29


PROJECT NAME MTR 903
MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-055
Depth : 12.29 m. To 16.00 m.
Box No. : 2 of 3
Date of Photograph . 11-08-2011
12.29
13.72
15.26
16.00

PD/WCH-055


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE (EAST)
Hole No. : PD/WCH-055
Depth : 16.00 m. To 19.36 m.
Box No. : 3 of 3
Date of Photograph . 11-08-2011
16.00
16.88
18.31
19.36
END

PD/NRW-084A


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084A
Depth : 0.00 m. To 8.09 m.
Box No. : 1 of 3
Date of Photograph . 09-08-2011
0.00
4.54
5.98
7.41
8.09


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084A
Depth : 8.09 m. To (11.50) m.
Box No. : 2 of 3
Date of Photograph . 09-08-2011
8.09
8.88
9.71
10.40
(11.50)

PD/NRW-084A


MTR
TYSAN
GEOTECHNICAL LIMITED
CONTRACT NO.: 903
PROJECT: SOUTH ISLAND LINE(EAST)
Hole No. : PD/NRW-084A
Depth : (11.50) m. To 13.72 m.
Box No. : 3 of 3
Date of Photograph . 09-08-2011
(11.50)
11.57
12.10
13.11
13.72
END

Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D036A**

SHEET 1 of 4

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR91	E 835618.28 N 812169.66	DATE from 08/09/2008 to 11/09/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 8.31 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples (No. Type Depth)	Reduced Level	Depth (m)	Legend	Grade	Description
08/09/2008	HX	08:00							A INSPECTION PIT 0.45 0.50 B 0.95 1.00	8.31 7.31	0.00 1.00			Brown, silty sandy angular fine to medium GRAVEL sized rock fragments. (FILL)
				24					T2H01 2.00					Light brown and grey, angular fine to coarse GRAVEL sized rock fragments. (FILL)
				33					T2H01 3.00	5.31	3.00			
				0					1 3.40 3.50	4.81	3.50			Soft to firm, greyish brown, slightly sandy SILT with some angular to subangular fine gravel sized rock fragments (FILL)
				98					T2H01 4.20					Light brownish grey and grey, angular fine to coarse GRAVEL with some cobble sized rock fragments (FILL)
				72					T2H01 4.80	3.71	4.60			
			0	86	75 34	55 22	17.5 N.I.		T2H01 5.30	3.31 3.01	5.00 5.30		III IV	Moderately strong, light grey, spotted black, locally mottled pink, moderately decomposed fine ash TUFF with very closely spaced, rough planar, extremely to very narrow, iron and manganese stained joints dipping, 0°-10° and 40°-50°. 5.00 - 5.30m: Weak, highly decomposed. Recovered as sandy subangular fine to medium GRAVEL of rock.
				0					2 5.50 6.40 6.50				V/IV	Very weak to weak, light grey, spotted black and pink, completely to highly decomposed QUARTZ SYENITE. (Silty fine to medium SAND with some subangular fine gravel sized rock fragments)
				33	10	0	N.I. N.R.		T2H01 7.40	1.81 1.51 0.91	6.50 6.80 7.40		III/II V/IV IV	Moderately strong to strong, light grey, spotted and mottled black and white, locally mottled pink, moderately to slightly decomposed QUARTZ SYENITE. Non intact. 6.80 - 7.40m: No recovery. Inferred as completely to highly decomposed QUARTZ SYENITE.
				0					3 8.50 8.60 4 9.60 9.70 5	-1.69	10.00			Weak, orangish brown, highly decomposed QUARTZ SYENITE. (Slightly sandy angular fine to medium GRAVEL sized syenite fragments)
				78										

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 12/09/2008

CHECKED KEN MA

DATE 13/09/2008

REMARKS

1. Inspection pit was dug to 1.00m depth.
2. Impression packer test was carried out at 27.50m-29.00m depth.
3. Packer (Water Absorption) test was carried out at 19.00m-20.50m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D036A**

SHEET 2 of 4

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR91	E 835618.28 N 812169.66	DATE from 08/09/2008 to 11/09/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 8.31 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
										-1.69	10.00		IV	As sheet 1 of 4.
08/09/2008		4.30m at 18:00	0	0				50/70mm 100/30mm 100blr/30mm	6 10.20 10.25 10.30					
09/09/2008		8.00m at 08:00							11.00					
	HX 12.00			100	57	0	>20		7 11.93 12.00 T2101	-3.69	12.00		III	Moderately strong to strong, light pinkish brown and pinkish grey, spotted and mottled, black and white, locally mottled pink, moderately to slightly decomposed QUARTZ SYENITE with closely to medium, locally extremely closely to very closely spaced, rough undulating, extremely to very narrow, iron and manganese stained joints dipping 0°-10°, 25°-35°, 40°-50°, 65°-75° and subvertical. 12.00 - 13.00m: Moderately strong, moderately decomposed
				100	92	71	9.5		12.53 T2101					
										-4.69	13.00		III/II	
				100	87	72			13.84 T2101					
							10.3							
				100	91	71	>20		15.12 T2101	-7.03	15.34		II	Strong, light pinkish grey, spotted and mottled, black and white, locally mottled pink, slightly decomposed QUARTZ SYENITE with closely to medium, locally extremely to very closely spaced, rough undulating and locally slickensided undulating, tight to extremely narrow, iron stained and locally chlorite stained joints dipping 0°-10°, 35°-45°, 50°-60°, 65°-75° and subvertical.
			60	100	86	54			15.94 T2101					
				100	97	88	6.5		17.34 T2101					
09/09/2008		8.20m at 18:00							18.83					
10/09/2008		8.40m at 08:00		100	94	88			T2101					
							>20 10.3			-11.69	20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 12/09/2008

CHECKED KEN MA

DATE 13/09/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D036A**

SHEET 3 of 4

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR91	E 835618.28 N 812169.66	DATE from 08/09/2008 to 11/09/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 8.31 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples (No. Type Depth)	Reduced Level	Depth (m)	Legend	Grade	Description
				100	100	82			20.04 T2101	-11.69	20.00		II	As sheet 2 of 4.
				100	100	100	3.1		20.55 T2101					
				100	100	100			21.94 T2101					
				100	88	60	12.5		23.38 T2101					
			60	100	100	92	2.2		24.38 T2101					
				100	97	97	9.6 4.3		25.93 T2101					
10/09/2008		8.20m at 18:00							27.43 T2101					
11/09/2008		8.40m at 08:00		100	92	82	14.0							
				100	96	86	4.1		28.75 T2101					
				100	92	68			29.72 T2101	-21.69	30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 12/09/2008

CHECKED KEN MA

DATE 13/09/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D036A**

SHEET 4 of 4

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835618.28 N 812169.66	PROJECT No. J3086
MACHINE & No. DR91		DATE from 08/09/2008 to 11/09/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 8.31 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				100	92	68	10.5		T2101				II	As sheet 2 of 4.
				100	54	39	>20		30.67 T2101					
				100	94	83	8.7		31.41 T2101					
			60	100	58	34	>20		32.25 T2101					
							8.6		33.01 T2101					
				100	46	29	>20							
							10.8							
							>20							
11/09/2008		8.20m at 18:00							33.95	-25.64	33.95			End of hole at 33.95m depth.
											40.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 12/09/2008

CHECKED KEN MA

DATE 13/09/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D037**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR02	E 835484.30 N 812182.41	DATE from 27/05/2008 to 29/05/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 5.05 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
27/05/2008	HX	08:00								5.05	0.00			Brown and greyish brown, silty fine to coarse SAND with some subangular fine to coarse gravel sized rock fragments. (FILL)
									A 0.45 0.50 B 0.95 1.00 C 1.55 1.60 (INSPECTION PIT)					
				36					1 2.00	3.05	2.00			Brown, angular coarse GRAVEL sized rock fragments in sandy silty matrix. (FILL)
				87					2 2.90 3.00 3.10	1.95	3.10			Dark grey and light pink, COBBLE with occasional angular coarse gravel of moderately decomposed granite and tuff. (FILL)
27/05/2008		Dry at 18:00												
28/05/2008		2.02m at 08:00		0					4.00	1.05	4.00			Grey, silty fine to medium SAND. (ALLUVIUM)
				90					3 5.00 5.10	-0.05	5.10			Yellowish brown, silty fine to medium SAND with some subrounded coarse gravel sized rock fragments. (ALLUVIUM)
			70						5 6.10 6.20					
								0,8 12,14,16,20 N=52	6 6.70	-1.65	6.70			Brown and grey, angular fine to coarse GRAVEL sized rock fragments in silty sandy matrix. (ALLUVIUM)
				0					7 7.00 7.05 7.15					
									8 8.15 8.25	-3.20	8.25			
				90					9				V	Extremely weak, orangish brown, completely decomposed TUFF. (Silty fine to coarse SAND with some angular fine to coarse gravel sized rock fragments)
									10 9.25 9.35					
28/05/2008	HX 9.83	4.46m at 18:00												
29/05/2008		2.10m		100	69	46	N.I.		T 9.83	-4.78	9.83 10.00		III	Moderately strong to strong, light pinkish grey,

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 30/05/2008

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DATE 31/05/2008

REMARKS

1. Inspection pit was dug to 1.60m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D037**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR02	E 835484.30 N 812182.41	DATE from 27/05/2008 to 29/05/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 5.05 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
		at 08:00		100	69	46	10.1			-4.95	10.00			
									T2101 10.57	-5.01	10.06		III/II	spotted black and light grey, moderately to slightly decomposed coarse ash crystal TUFF with closely, locally very closely spaced, rough planar, extremely to very narrow, iron stained joints, dipping 0°-10°, 60°-70° and 80°-90°. 9.83 - 10.06m: Moderately strong, brown, moderately decomposed.
				100	97	76								
									T2101					
							1.4			-6.59	11.64		II	Strong, grey, spotted black, light pink and white, slightly decomposed coarse ash crystal TUFF with widely, locally closely spaced, rough and smooth planar, extremely narrow, chlorite coated joints, dipping 10°-20° and 80°-90°.
				100	100	97			12.13					
									T2101					
							5.1							
									13.64	-8.55	13.60		III/II	Moderately strong to strong, light pinkish grey, spotted black and white, moderately to slightly decomposed coarse ash crystal TUFF with closely, locally very closely spaced, rough and smooth planar, extremely to very narrow, chlorite coated and iron stained joints, dipping 10°-20°, 30°-40°, 60°-70° and 80°-90°. 14.03 - 14.26m: Moderately strong, light green, moderately decomposed.
				100	82	62				-8.98	14.03		III	
							>20			-9.21	14.26		III/II	
							6.9		T2101					
			70						15.18	-10.23	15.28		II	Strong, grey, spotted black and white, slightly decomposed coarse ash crystal TUFF with widely, locally medium spaced, smooth and slickensided planar, extremely to very narrow, chlorite coated joints, dipping 0°-10°, 20°-30°, 30°-40°, 60°-70° and 80°-90°.
				100	100	89	3.8							
							1.4		T2101					
									16.68					
				100	100	100								
									T2101					
									18.24					
				100	100	100			T2101					
							2.7		18.91					
				100	100	100			T2101					
									19.80	-14.66	19.71		II	Strong, light pinkish grey, spotted black and
				100	100	89					20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

REMARKS

LOGGED T T FUNG

DATE 30/05/2008

CHECKED KEN MA

DATE 31/05/2008

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D037**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR02	E 835484.30 N 812182.41	DATE from 27/05/2008 to 29/05/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 5.05 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				100	100	89	4.3			-14.95	20.00		II	white, slightly decomposed coarse ash crystal TUFF with medium spaced, slickensided planar, extremely narrow, chlorite coated joints, dipping 10°-20°.
			70						T2101	-15.60	20.65		II	Strong, grey, spotted black, pink and white, slightly decomposed coarse ash crystal TUFF with medium spaced, smooth planar, extremely narrow, chlorite coated joints, dipping 20°-30° and 80°-90°.
29/05/2008		1.76m at 18:00							21.33	-16.28	21.33			End of hole at 21.33m depth.
											30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 30/05/2008

CHECKED KEN MA

DATE 31/05/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D038**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR83	E 835393.50 N 812168.58	DATE from 30/07/2008 to 05/08/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.78 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples (No. Type Depth)	Reduced Level	Depth (m)	Legend	Grade	Description
30/07/2008	PX	08:00								4.58	0.20			CONCRETE surface.
									A 0.45 0.50 B 0.95 1.00 C 1.45 1.50 D 1.95 2.00 E 2.45 2.50 F 2.75 2.80 INSPECTION PIT					Brown, silty fine to coarse SAND with some subangular fine to medium gravel sized rock fragments. (FILL)
30/07/2008		Dry at 18:00	80							2.03	2.75			
31/08/2008		Dry at 08:00		67					T2101 4.00					CONCRETE.
				78					T2101 5.00					
01/08/2008		Dry at 18:00		74					T2101	-0.22	5.00			Light grey, angular to subangular coarse GRAVEL and COBBLE sized granite and tuff fragments. (FILL)
02/08/2008		2.60m at 08:00		100					1 5.50	-0.72	5.50			Soft, dark brownish grey, slightly sandy clayey SILT. (DISTURBED MARINE DEPOSIT)
								1,1 1,1,1,2 N=5	2 6.50 6.60 3 7.10					
			70						4 7.50 7.55					
				100					5 8.00					
				51					6 8.90 9.00	-4.22	9.00			Grey, angular to subangular, coarse GRAVEL sized rock fragments. (FILL)
									T2101	-5.22	10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 06/08/2008

CHECKED KEN MA

DATE 07/08/2008

REMARKS

1. 3 nos. of inspection pits were dug to 0.20m, 1.00m and 2.80m depths.
2. Impression packer test was carried out at 15.50m-17.00m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D038**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR83	E 835393.50 N 812168.58	DATE from 30/07/2008 to 05/08/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.78 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				51						-5.22	10.00			As sheet 1 of 3.
02/08/2008 04/08/2008		3.90m at 18:00 2.85m at 08:00		100					T2101 7 10.50	-5.72	10.50		V	Extremely weak, yellowish brown, completely decomposed QUARTZ SYENITE. (Slightly silty fine to medium SAND with occasional subangular fine gravel sized quartz and rock fragments)
									8 11.50 11.60					
								7,10 10,10,10,15 N=45	9 12.10					
	PX 12.70								10 12.50 12.55	-7.92	12.70			
				39	32	31	4.8		12.70				II	Strong, light grey, mottled and spotted, black and white, locally mottled pink, slightly decomposed, QUARTZ SYENITE with closely, locally medium spaced, rough undulating, extremely narrow, locally very narrow, iron stained and chlorite coated joints dipping 0°-10°, 30°-40°, 45°-55° and 65°-75°.
							N.R			-8.34	13.12		V	13.12 - 13.78m: No recovery. Inferred as completely decomposed QUARTZ SYENITE.
				100	100	100	1.0		T2101 13.78	-9.00	13.78		II	
				92	82	54	>20		T2101 14.55					
			70				3.3		T2101					
							>20							
				98	98	89	2.5		15.50					
									T2101					
									17.00	-12.22	17.00		III/II	17.00 - 20.36m: Moderately strong to strong, moderately to slightly decomposed.
				100	94	42	9.8		T2101					
									18.30	-13.52	18.30			18.30 - 18.70m: Subvertical joint.
				100	88	60				-13.92	18.70			
									T2101					
04/08/2008 05/08/2008		3.00m at 18:00 3.10m at 08:00								-14.42	19.20			19.20 - 19.40m: Subvertical joint.
				100	89	46			19.40	-14.62	19.40			
									T2101					
										-15.22	20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

REMARKS

LOGGED T T FUNG

DATE 06/08/2008

CHECKED KEN MA

DATE 07/08/2008

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D038**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR83	E 835393.50 N 812168.58	DATE from 30/07/2008 to 05/08/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.78 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				100	89	46				-15.22	20.00		III/II	As sheet 2 of 3.
				100	67	30			T2|01 20.36	-15.58	20.36		II	
							>20			-15.67	20.65			20.65 - 20.67m: Quartz vein.
				100	92	86	9.4		T2|01 21.00	-15.89	20.67			
				100	88	69			T2|01 21.80					
			70	100	95	64			T2|01 22.80					
				100	66	52	>20		T2|01 23.65					
							8.3		T2|01 24.38					
				100	97	89			T2|01 25.38					
05/08/2008		2.60m at 18:00								-20.52	25.30			End of hole at 25.30m depth.
											30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 06/08/2008

CHECKED KEN MA

DATE 07/08/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D039**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835363.23 N 812219.95	PROJECT No. J3086
MACHINE & No. DR71		DATE from 12/07/2008 to 16/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 5.03 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
												5.03	0.00			
12/07/2008	HX	08:00										4.83	0.20			CONCRETE surface.
									A		0.45 0.50					Light brown, silty medium to coarse SAND with some angular fine to medium gravel sized rock fragments. (FILL)
									B		0.95 1.00					
									C		1.45 1.50					
									D		1.95 2.00					
									E		2.45 2.50					
		Dry at 18:00														
12/07/2008									F		2.95 3.00	2.03	3.00			
14/07/2008		Dry at 08:00		43						T2101						Reddish grey, subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				0							4.50	0.53	4.50			
				35					1		4.60 4.70	0.33	4.70			4.50 - 4.70m: Grey, medium to coarse SAND with some angular to subangular medium to coarse gravel sized rock fragments and shell fragments. (FILL)
			70							T2101						
											5.70	-0.67	5.70			5.70 - 6.80m: Grey, medium to coarse SAND with some angular to subangular medium to coarse gravel sized rock fragments and shell fragments. (FILL)
		2.85m at 18:00		0							6.50					
14/07/2008									2		6.70 6.80	-1.77	6.80			
15/07/2008		2.86m at 08:00		17						T2101						
											8.00	-2.97	8.00			8.00 - 8.70m: Grey, medium to coarse SAND with some angular to subangular medium to coarse gravel sized rock fragments and shell fragments. (FILL)
				0							8.50					
				23					3		8.60 8.70	-3.67	8.70			
										T2101						
												-4.97	10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 17/07/2008

CHECKED KEN MA

DATE 18/07/2008

REMARKS

1. 2 nos. of inspection pits were dug to 2.00m and 3.00m depths.
2. Impression packer test was carried out at 17.50m-19.00m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D039**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR71	E 835363.23 N 812219.95	DATE from 12/07/2008 to 16/07/2008
FLUSHING MEDIUM WATER	ORIENTATION **Vertical**	GROUND LEVEL + 5.03 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
										-4.97	10.00			
	HX 10.80			0 20					4 10.50 10.55 10.60	-5.57	10.60			10.00 - 10.60m: Grey, medium to coarse SAND with some angular to subangular medium to coarse gravel sized rock fragments and shell fragments. (FILL)
				16					T2IO1 11.60					
				100	100	100	3.2		T2IO1 12.76	-7.73	12.76		II	Strong, greyish pink, mottled white, slightly decomposed, medium to coarse grained GRANITE with medium, locally very closely and closely spaced, rough planar and undulating, tight to extremely narrow, iron and chlorite stained joints, dipping 0°-10°, 20°-30° and 40°-50°.
				100	100	100			T2IO1 13.76					
			70	100	95	91			T2IO1 14.68					
				100	100	100			T2IO1 16.00					
15/07/2008		2.80m at 18:00							T2IO1					
16/07/2008		2.85m at 08:00		100	98	98			17.26					
				100	100	85			T2IO1 18.23					
				100	100	100			T2IO1 19.05					
									T2IO1		20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 17/07/2008

CHECKED KEN MA

DATE 18/07/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D039**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR71	E 835363.23 N 812219.95	DATE from 12/07/2008 to 16/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 5.03 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples (No. Type Depth)	Reduced Level	Depth (m)	Legend	Grade	Description
				100	65	19	>20		20.02 T2IOI	-14.99	20.02		III	20.02 - 20.85m: Moderately strong, grey, moderately decomposed. Highly fractured.
				100	100	94	4.8		20.85 T2IOI	-15.82	20.85		II	
			70	100	100	96			22.30 T2IOI					
16/07/2008		18:00							23.34	-18.31	23.34			End of hole at 23.34m depth.
											30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 17/07/2008

CHECKED KEN MA

DATE 18/07/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D040**

SHEET 1 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR12	E 835385.08 N 812134.51	DATE from 17/03/2008 to 19/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.40 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
17/03/2008	PX	08:00								7.40	0.00			Grey, CONCRETE surface.
									A 0.45 0.50	7.30	0.10			Light brownish grey, silty fine SAND with much angular fine to medium gravel of rock. (FILL)
									B 0.95 1.00					
	PX 1.50 HX								C 1.45 1.50					
									D 1.95 2.00					
									E 2.45 2.50	4.90	2.50			
									F 2.95 3.00	4.40	3.00			Brown, angular fine to coarse GRAVEL of rock in sand matrix. (FILL)
			70	93					1				V	Extremely weak, grey and brown, completely decomposed TUFF. (Angular medium to coarse GRAVEL of rock in silty sand matrix)
									2 4.00 4.10					
								1,2 2,12,14,16 N=44	3 4.60					
									4 5.00 5.05					
				73	0	0	>20		5.25	2.15	5.25		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed fine ash vitric TUFF. Core recovered as angular coarse GRAVEL and COBBLE of rock.
									T2101					
				38					5 6.35	1.05	6.35		V	Extremely weak, greyish brown, completely decomposed TUFF. (Angular fine to medium GRAVEL of rock)
	HX 6.90								6 6.88 6.98	0.42	6.98		IV/III	Strong, dark grey to grey, slightly decomposed eutaxitic fine ash vitric TUFF with medium to widely, locally closely spaced, rough planar and undulating, tight to extremely narrow, iron and limonite stained joints, dipping 0°-10°, 30°-40°, 60°-70° and subvertical. 6.98 - 7.44m: Moderately weak to moderately strong, highly to moderately decomposed. 7.44 - 8.15m: Moderately strong, moderately decomposed. 8.15 - 9.72m: Moderately strong to strong, moderately to slightly decomposed.
				82	70	30	N.I.							
							4.8		T2101	-0.04	7.44		III	
				100	100	90			8.15	-0.75	8.15		III/II	
			55						T2101					
							3.5							
				98	95	95			9.37					
									T2101	-2.32	9.72		II	
										-2.60	10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 25/03/2008

CHECKED KEN MA

DATE 25/03/2008

REMARKS

1. Inspection pit was dug to 3.00m depth.
2. Impression packer test was carried out at 10.85m-12.35m depth.
3. Standpipe was installed at 18.54m depth.
4. Water sample was taken at 18.84m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D040**

SHEET 2 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR12	E 835385.08 N 812134.51	DATE from 17/03/2008 to 19/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.40 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				98	95	95				-2.60	10.00		II	As sheet 1 of 2.
17/03/2008		5.00m at 18:00							T2101					
18/03/2008		5.60m at 08:00		100	100	82			10.65					
							14.8		T2101					
				100	100	91	1.1		12.19					
									T2101					
							8.7		13.19	-5.70	13.10		III	
				62	57	21	N.R.		T2101	-5.93	13.33		V	13.10 - 13.33m: Moderately strong, greyish green, moderately decomposed chloritized.
							13.3			-6.11	13.51		V	13.33 - 13.51m: No recovery. Inferred as completely decomposed TUFF.
				100	100	100	0.5		13.66	-6.26	13.66		III	13.51 - 13.66m: Moderately strong, greyish green, moderately decomposed.
			85						T2101				II	Strong, dark grey to grey, slightly decomposed eutaxitic fine ash vitric TUFF with medium to widely, locally closely spaced, rough planar and undulating, tight to extremely narrow, iron and limonite stained joints, dipping 0°-10°, 30°-40°, 60°-70° and subvertical.
				99	99	99			14.61					
							13.3		T2101					
18/03/2008		5.10m at 18:00							15.62					
19/03/2008		5.50m at 08:00		100	92	54			T2101					
							>20		16.87					
				98	84	50			T2101					
										-10.51	17.91		III/II	17.91 - 18.20m: Moderately strong to strong, moderately to slightly decomposed.
				100	62	49	7.4		18.16	-10.80	18.20		II	
19/03/2008		18:00							T2101					
									18.74 18.84	-11.44	18.84			End of hole at 18.84m depth.
											20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 25/03/2008

CHECKED KEN MA

DATE 25/03/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D041**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR76	E 835333.97 N 812155.72	DATE from 14/07/2008 to 18/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.56 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
14/07/2008	HX	08:00										4.56	0.00			
												4.36	0.20			CONCRETE surface.
									A		0.45 0.50					Brown, very silty fine SAND with occasional angular fine gravel sized rock fragments. (FILL)
									B		0.95 1.00					
									C	INSPECTION PIT	1.45 1.50					
									D		1.95 2.00					
									E		2.45 2.50					
		Dry at 16:00							F		2.85 2.90					
14/07/2008												1.66	2.90			
15/07/2008		Dry at 08:00		48												Grey, angular medium to coarse GRAVEL and COBBLE with occasional boulder sized rock fragments. (FILL)
				36						T2101						
											4.20					
										T2101						
											4.90 5.00	-0.34	4.90			
			60	100					1						V	Extremely weak, reddish brown, completely decomposed, fine to medium grained QUARTZ SYENITE. (Silty fine to medium SAND with occasional subangular fine gravel sized quartz)
									2		6.00 6.10					
		2.30m at 16:00														
16/07/2008									3		6.60					
17/07/2008		1.80m at 08:00						2.10 17,27,32,44 N=120	4		7.00 7.05					
				0							7.50					
	HX 7.84								5		7.74 7.84	-3.28	7.84			
				100	62	62	4.6			T2101					II	Strong, grey, mottled and dappled with pink, slightly decomposed, fine to medium grained QUARTZ SYENITE, closely to medium, locally very closely spaced, rough planar and undulating, extremely narrow to very narrow, iron stained joints, dipping 0°-10°,20°-30°, 40°-50° and 60°-70°.
				97	97	70					8.64					
										T2101						
												-5.44	10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 19/07/2008

CHECKED KEN MA

DATE 21/07/2008

REMARKS

1. 2 nos. of inspection pits were dug to 2.20m and 2.90m depths.
2. Impression packer test was carried out at 19.30m-20.80m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D041**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835333.97 N 812155.72	PROJECT No. J3086
MACHINE & No. DR76		DATE from 14/07/2008 to 18/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.56 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				94	84	73			10.10 T2101				II	As sheet 1 of 3.
				100	93	93			11.47 T2101					
				94	78	78			12.38 T2101					
				100	94	59			13.10 T2101					
			60	100	93	93			14.63 T2101					
				100	100	70			16.13 T2101					
							7.9		17.56 T2101					
				100	96	85				-13.54	18.10		II	Strong, greyish green, slightly decomposed, chlorite, altered and silicified fine grained GRANITE with very closely to closely spaced, rough planar, undulating and locally stepped, extremely narrow to very narrow, chlorite stained and locally clean joints, dipping, 0°-10°, 20°-30° and 35°-45°.
										-13.89	18.45		III	
		2.30m at 18:00		100	22	22	>20		18.70 T2101					
17/07/2008														
18/07/2008		2.10m at 08:00		100	91	75	4.2		19.15 T2101	-14.69	19.25		II	18.45 - 19.25m: Moderately strong, moderately decomposed with highly fractured.
										-15.44	20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 19/07/2008

CHECKED KEN MA

DATE 21/07/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D041**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR76	E 835333.97 N 812155.72	DATE from 14/07/2008 to 18/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.56 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
										-15.44	20.00			
				100	100	89			20.14				II	As sheet 2 of 3.
									T2K01					
				100	97	72			21.60	-17.24	21.80		III	
										-17.44	22.00		II	21.80 - 22.00m: Moderately strong, moderately decomposed.
			60						T2K01					
				100	94	91			23.11					
									T2K01					
				100	94	94			24.60					
										-20.34	24.90			24.90 - 26.09m: Greyish pink.
									T2K01					
18/07/2008		2.80m at 18:00							25.89	-21.53	26.09			End of hole at 26.09m depth.
											30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

REMARKS

LOGGED T T FUNG

DATE 19/07/2008

CHECKED KEN MA

DATE 21/07/2008

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D042**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835284.13 N 812173.50	PROJECT No. J3086
MACHINE & No. DR70		DATE from 07/07/2008 to 11/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.75 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
07/07/2008	HX	08:00								4.75	0.00			
										4.55	0.20			CONCRETE surface.
									A 0.45 0.50 B 0.95 1.00 C 1.45 1.50 D 1.95 2.00 E 2.45 2.50 INSPECTION PIT					Brown, slightly silty fine to coarse SAND with subangular to subrounded fine to medium gravel sized rock fragments. (FILL)
		Dry at 18:00							F 2.95 3.00	1.75	3.00			
07/07/2008 08/07/2008		Dry at 08:00		40					T2101					Reddish brown and light grey, angular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				67					4.00 T2101					
			70	100					4.90	-0.15	4.90			
									1 5.00					Soft, dark grey, slightly sandy SILT with some shell fragments. (MARINE DEPOSIT)
								1,1 1,1,1,1 N=4	2 6.00 6.10 3 4 6.50 6.55					
		2.76m at 18:00												
08/07/2008 09/07/2008		2.50m at 08:00		0					7.00	-2.25	7.00			7.00 - 9.00m: With many shell fragments.
								1,1 1,1,2,2 N=6	5 8.00 8.10 6 8.50 8.55					
				100					7 9.00	-4.25	9.00		V	Extremely weak, yellowish brown, mottled orange and white, completely decomposed GRANITE. (Very stiff, sandy SILT with occasional subangular fine gravel sized quartz)
										-5.25	10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 12/07/2008

CHECKED KEN MA

DATE 14/07/2008

REMARKS

1. 2 nos. of inspection pits were dug to 2.00m and 3.00m depths.
2. Impression packer test was carried out at 19.00m-20.50m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D042**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR70	E 835284.13 N 812173.50	DATE from 07/07/2008 to 11/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.75 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
											10.00	-5.25	10.00			
				100	79	71	3.5		8		10.10	5.36	10.10		II	As sheet 1 of 3.
	HX 11.00									T2101						Strong, light greyish pink, slightly decomposed fine to medium grained GRANITE with closely to medium, locally extremely to very closely spaced, rough undulating and planar, locally slickensided planar, tight to extremely narrow, locally very narrow, clean, locally iron and chlorite stained and slightly kaolin coated joints, dipping 10°-20°, 20°-30°, 40°-50° and subvertical.
				100	100	100					10.94					
										T2101						
				100	100	76					11.86					
										T2101						
				91	27	13	>20				12.96					
										T2101						
				100	79	79					14.08					
							5.3			T2101						
		2.60m at 18:00	70													
09/07/2008 11/07/2008		2.70m at 08:00		100	100	100					15.30					
										T2101						
				98	78	78					16.22					
										T2101						
				100	76	67					17.22					
										T2101						
				100	77	70					18.10					
										T2101						
				100	100	78					18.98					
										T2101						
				100	100	100	8.0				19.83	-15.25	20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

REMARKS

LOGGED T T FUNG

DATE 12/07/2008

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DATE 14/07/2008

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D042**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835284.13 N 812173.50	PROJECT No. J3086
MACHINE & No. DR70		DATE from 07/07/2008 to 11/07/2008
FLUSHING MEDIUM WATER	ORIENTATION **Vertical**	GROUND LEVEL + 4.75 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				100	100	100	2.8						II	As sheet 2 of 3.
				100	73	46	17.9		T2/01 20.72					
							>20							
			70				5.0		T2/01 22.15					
							20.0							
				100	100	100	1.6		T2/01 23.40					
11/07/2008		18:00								-18.65	23.40			End of hole at 23.40m depth.
											30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 12/07/2008

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DATE 14/07/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D043**

SHEET 1 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR11	E 835315.18 N 812119.77	DATE from 15/03/2008 to 17/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.38 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
										7.38	0.00			
15/03/2008	PX	08:00								7.28	0.10		V	Grey, CONCRETE surface.
									A 0.45 0.50					Extremely weak, light brown, completely decomposed TUFF. (Silty fine to medium SAND with occasional angular fine to medium gravel of rock)
									B 0.95 1.00					
									C 1.45 1.50					
									INSPECTION PIT					
									D 1.95 2.00	5.38	2.00		V/IV	Extremely weak to very weak, light brown to brown, completely to highly decomposed TUFF. (Angular fine to medium GRAVEL of rock in silty sand matrix)
									E 2.45 2.50	4.88	2.50		IV	
									F 2.95 3.00					Weak, yellowish brown, mottled white, highly decomposed fine ash TUFF. (Angular coarse GRAVEL of weak rock)
									4.50 T3101	2.88	4.50		IV	Weak, light brown, highly decomposed fine ash vitric TUFF. Core recovered as angular to subangular coarse GRAVEL and COBBLE of rock in sandy silt matrix.
				100	0	0	>20							
			60					50/60mm 200/50mm 200blw/50mm	1 5.00 5.06 5.11	2.38	5.00		IV	
	PX 5.36								5.36 T3101	2.02	5.36		III	Very weak, reddish brown, highly decomposed TUFF. (Angular fine to medium GRAVEL of rock)
				100	100	96	3.9			1.48	5.90		II	Strong, dark grey, locally light grey, slightly decomposed fine ash vitric TUFF with closely to medium, locally very closely spaced, rough planar and undulating, tight to extremely narrow, iron and slightly chlorite stained, slightly kaolin coated joints, dipping 0°-10°, 30°-40°, 50°-60° and 70°-80°.
		Dry at 18:00												5.36 - 5.90m: Moderately strong, light grey, moderately decomposed.
15/03/2008							>20		6.46 T3101					
17/03/2008		Dry at 08:00		100	53	47	9.0		6.78					
				98	89	60								
									T3101					
				100	41	24			8.01 T3101	-0.82	8.20		III	8.20 - 8.50m: Moderately strong, moderately decomposed.
							>20		8.50 T3101	-1.12	8.50		II	
				100	95	48	16.7							
				98	87	82	6.1		8.92 T3101					
									9.87	-2.62	10.00			
				100	94	84								

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 18/03/2008

CHECKED KEN MA

DATE 19/03/2008

REMARKS

1. Inspection pit was dug to 3.00m depth.
2. Impression packer test was carried out at 6.50m-8.00m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D043**

SHEET 2 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR11	E 835315.18 N 812119.77	DATE from 15/03/2008 to 17/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.38 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
17/03/2008		18:00	80	100	94	84			T2/01 10.00	-2.62 -3.52	10.00 10.90		II	As sheet 1 of 2. End of hole at 10.90m depth.

20.00

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 18/03/2008

CHECKED KEN MA

DATE 19/03/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D044**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR79	E 835262.74 N 812137.86	DATE from 23/07/2008 to 30/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.53 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
												4.53	0.00			
23/07/2008	HX	08:00										4.33	0.20			CONCRETE surface.
									A		0.45-0.50					Brown, silty fine to medium SAND with occasional subangular fine to medium gravel sized rock fragments. (FILL)
									B		0.95-1.00					
									C	INSPECTION PIT	1.45-1.50					
									D		1.95-2.00					
		Dry at 18:00							E		2.45-2.50					
23/07/2008									F		2.75-2.80	1.73	2.80			
24/07/2008		Dry at 08:00		56					T2101							Light grey and brownish grey, angular medium to coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				39					T2101		3.30					
				39					T2101		4.00					
			50						T2101							
				100	100	93	2.4		T2101		5.15	-0.62	5.15		II	Strong, grey, spotted white and locally striped black, slightly decomposed lapilli fine ash TUFF with closely to medium, locally very closely spaced, rough undulating and planar, tight to extremely narrow, clean and iron stained and locally slightly chlorite coated joints, dipping 0°-10°, 20°-30°, 40°-50° and 65°-75°.
	HX 6.00			93	84	73			T2101		6.00					
		3.20m at 18:00					12.8		T2101							
24/07/2008									T2101		6.75					
25/07/2008		3.50m at 08:00		100	94	94	2.9		T2101		7.10					
				100	100	100			T2101		7.57					
		3.00m at 18:00		100	100	77	6.7		T2101		7.83					
25/07/2008									T2101							
26/07/2008		3.70m at 08:00		100	100	100	6.0		T2101		8.65					
				100	100	100			T2101		9.55	-4.67	9.20			9.20 - 13.44m: Eutaxitic.
				96	96	80	9.3		T2101			-5.47	10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 31/07/2008

CHECKED KEN MA

DATE 01/08/2008

REMARKS

1. 3 nos. of inspection pits were dug to 0.70m, 2.00m and 2.80m depths.
2. Impression packer test was carried out at 14.80m-16.30m depth.
3. Standpipe was installed at 22.17m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D044**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR79	E 835262.74 N 812137.86	DATE from 23/07/2008 to 30/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.53 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				98	96	80	6.2		T2\01 10.55	-5.47	10.00		II	As sheet 1 of 3.
				100	100	89			T2\01 11.55					
		3.40m at 18:00												
26/07/2008 28/07/2008		3.70m at 08:00		100	100	67			T2\01 12.06					
				98	98	88			T2\01 12.80					
				100	90	90			T3\01	-8.91	13.44			
				97	97	83			T2\01 13.67					
				100	100	97	4.7		T2\01 14.33	-9.80	14.33			
			50							-9.90	14.43			14.33 - 14.43m: Clast bearing.
		3.30m at 18:00							T2\01 15.60					
28/07/2008 29/07/2008		3.65m at 08:00		100	100	100			T2\01 16.33	-11.80	16.33			
				100	100	100	2.2		T2\01 16.90	-12.37	16.90			16.33 - 16.90m: Eutaxitic.
				100	100	100			T2\01 17.47	-12.74	17.27			
				100	100	100				-13.37	17.90			17.27 - 17.90m: Clast bearing.
				100	97	97			T2\01 18.73					
		3.30m at 18:00							T2\01 19.49					
29/07/2008 30/07/2008		2.70m at 08:00		100	99	95			T2\01	-15.47	20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

REMARKS

LOGGED T T FUNG

DATE 31/07/2008

CHECKED KEN MA

DATE 01/08/2008

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D044**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR79	E 835262.74 N 812137.86	DATE from 23/07/2008 to 30/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.53 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				100	99	95						-15.47	20.00		II	As sheet 1 of 3.
				100	100	100				T2/01	20.47					
			50	100	100	100				T2/01	21.34					
				100	100	91	5.5			T2/01	21.74					
				100	100	80				T2/01	22.17					
30/7/2008		3.30m at 18:00								T2/01	22.67	-18.14	22.67			End of hole at 22.67m depth.
													30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

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DATE 31/07/2008

CHECKED KEN MA

DATE 01/08/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D045**

SHEET 1 of 1

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR10	E 835263.95 N 812105.68	DATE from 15/03/2008 to 17/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.40 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
												7.40	0.00			
15/03/2008	PX	08:00										7.30	0.10			Grey, CONCRETE surface.
									A	•	0.45 0.50	6.90	0.50			Grey, angular medium GRAVEL of rock and concrete. (FILL)
									INSPECTION PIT							Light brown, angular medium to coarse GRAVEL of tuff in sand matrix. (FILL)
									B	•	0.95 1.00	6.40	1.00		IV	Weak, light brown, highly decomposed coarse ash TUFF. (Angular medium to coarse GRAVEL of rock)
									C		1.45 1.50					
	PX 1.90			100	10	0	>20				1.90	5.50	1.90		IV/III	Moderately strong, pinkish brown, moderately decomposed altered fine ash vitric TUFF with highly fractured and very closely spaced, rough and smooth, planar and undulating, tight to extremely narrow, iron and manganese stained joints, dipping 0°-10° and 40°-50°.
				93	30	0			T2101		2.60					1.90 - 2.90m: Moderately weak to moderately strong, highly to moderately decomposed. Non-intact.
				98	73	0	17.2		T2101		3.00	4.50	2.90		III	
15/03/2008		Dry at 18:00							T2101		3.78					
17/03/2008		Dry at 08:00		94	81	38										
			80				13.2		T2101		5.18					
				100	61	23	>20					2.57	4.83		III/II	Moderately strong to strong, reddish grey to grey, moderately to slightly decomposed fine ash vitric TUFF with very closely to closely spaced, rough and smooth, planar and undulating, tight to extremely narrow, iron stained, slightly kaolin coated joints, dipping 0°-10°, 30°-40°, 65°-75° and subvertical.
							6.7		T2101		5.68					
				99	85	55										
									T2101		7.29					
				100	88	35	12.5		T2101		8.49					
17/03/2008		18:00										-1.09	8.49			End of hole at 8.49m depth.
													10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 18/03/2008

CHECKED KEN MA

DATE 19/03/2008

REMARKS

1. Inspection pit was dug to 1.50m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D046**

SHEET 1 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR69	E 835175.22 N 812093.62	DATE from 27/06/2008 to 02/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.60 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
27/06/2008	HX	08:00										4.60	0.00			
									A		0.45-0.50	4.40	0.20			CONCRETE surface.
									B		0.95-1.00					Yellowish brown, very silty fine to coarse SAND with some angular fine to medium gravel sized rock fragments. (FILL)
									C	INSPECTION PIT	1.45-1.50					
									D		1.95-2.00					
									E		2.45-2.50					
		Dry at 18:00							F		2.95-3.00					
27/06/2008 28/06/2008		Dry at 08:00		100								1.60	3.00			Brownish grey and grey, angular to subangular medium to coarse GRAVEL and COBBLE sized rock fragments. (FILL)
			60	100						T2101	4.50					
										T2101						
				100						T2101	6.00					
										T2101	7.50	-2.90	7.50			Grey, angular to subangular fine to coarse GRAVEL sized rock fragments. (FILL)
				100					1		8.00					
	HX 9.20								2		9.00-9.10	-4.50	9.10			
				47	6	0	N.I.	↓ 50/20mm 100/40mm 100blS/40mm	3		9.11-9.20	-4.60	9.20		IV/III	Dark grey, fine to medium GRAVEL sized rock fragments with some shell fragment in clay matrix. (DISTURBED MARINE DEPOSIT?)
			70				N.R.			T2101		-4.96	9.56		V	Moderately strong, brownish white, moderately decomposed lapilli fine ash vitric TUFF with very
												-5.37	9.97 10.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 03/07/2008

CHECKED KEN MA

DATE 04/07/2008

REMARKS

1. Inspection pit was dug to 3.00m depth.
2. Impression packer test was carried out at 12.00m-13.50m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D046**

SHEET 2 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR69	E 835175.22 N 812093.62	DATE from 27/06/2008 to 02/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 4.60 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level -5.40	Depth (m) 10.00	Legend	Grade	Description
				100	87	44	7.3		9.97				III	closely to closely spaced, rough planar and undulating, extremely narrow to very narrow, calcite infilled, locally iron stained joints, dipping 0°-10° and 20°-30°.
				100	77	28			T2101 10.74					9.20 - 9.56m: Moderately strong to moderately weak, highly to moderately decomposed. Highly fractured.
		3.07m at 18:00							T2101	-6.83	11.43			9.56 - 9.97m: No recovery. Inferred as completely decomposed TUFF.
28/06/2008										-7.03	11.63		IV/III	11.43 - 11.63m: Moderately strong to
02/07/2008		3.10m at 03:00		94	73	50			11.62	-7.10	11.70		III	moderately weak, highly to moderately
										-7.12	11.72		II	decomposed. Highly fractured.
									T2101					Strong, dark grey, striped white, slightly decomposed lapilli fine ash vitric TUFF, closely to medium spaced, rough planar and undulating, extremely narrow to very narrow, clean, calcite infilled, locally iron stained joints, dipping 0°-10°, 20°-30° and 40°-50°.
				100	91	77	4.9		13.00					11.72 - 14.82m: Pink, with granitic intrusion.
			70						T2101					
				96	96	87			14.02					
									T2101					
				94	91	87			14.82	-10.22	14.82			
									T2101					
				100	100	100			15.68					
									T2101					
02/07/2008		18:00							16.80	-12.20	16.80			End of hole at 16.80m depth.
											20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 03/07/2008

CHECKED KEN MA

DATE 04/07/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D047**

SHEET 1 of 2

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835177.06 N 812034.81	PROJECT No. J3086
MACHINE & No. DR67		DATE from 18/06/2008 to 23/06/2008
FLUSHING MEDIUM WATER	ORIENTATION **Vertical**	GROUND LEVEL + 9.10 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
										9.10	0.00			
18/06/2008	HX	08:00								8.90	0.20			CONCRETE surface.
									A 0.45 0.50					Greyish brown to brown, very clayey, silty medium to coarse SAND with some angular fine, occasional coarse gravel of rock. (FILL)
									INSPECTION PIT					
									B 0.95 1.00					
									C 1.45 1.50					
									D 1.95 2.00	7.10	2.00			
				68					T2101					
				100					1 2.20	6.90	2.20			Grey and brown, angular COBBLE with some angular medium gravel of rock and concrete. (FILL)
														Reddish brown, angular medium to coarse GRAVEL of granite in clayey sand matrix. (FILL)
18/06/2008	HX 3.30	Dry at 18:00							2 3.20 3.30	5.80	3.30			
19/06/2008		Dry at 08:00		88						5.70	3.40			Brown and light grey, angular medium to coarse GRAVEL of moderately decomposed tuff and granite. (FILL)
					100	54	11.6			5.52	3.58		III/II	3.30 - 3.40m: COBBLE of concrete.
									T2101					
				97	90	54			4.14					Moderately strong to strong, grey to dark grey, mottled brown, moderately to slightly decomposed eutaxitic fine ash vitric TUFF with closely spaced, rough planar and undulating, extremely narrow to very narrow, locally narrow, iron and locally manganese stained joints dipping 0°-10°, 20°-30° and 75°-85°.
							5.8		T2101					
			60						5.30					
				96	93	84			T2101					
							8.9		6.48					
				94	0	0	N.I.		T2101	2.62	6.48		III/II	Strong, dark grey, slightly decomposed crystal bearing fine ash vitric TUFF with highly fractured and medium spaced, rough and smooth, planar and stepped, tight to extremely narrow, slightly chlorite stained and clean joints dipping 0°-10° and 75°-85°. Core with some micro-fractures.
		6.42m at 18:00												
19/06/2008														
20/06/2008		6.50m at 08:00		56	53	46	4.1		7.12	1.98	7.12		II	6.48 - 7.12m: Moderately strong to strong, moderately to slightly decomposed.
									T2101					
							N.R.			1.24	7.86		V	7.86 - 8.43m: No recovery. Inferred as completely decomposed TUFF.
									8.43	0.67	8.43			
				100	78	62	10.0		T2101				II	Strong, dark grey, slightly decomposed crystal bearing fine ash vitric TUFF with closely, locally medium spaced, rough and smooth, planar and undulating, tight to extremely narrow, iron and calcite coated and clean joints dipping 0°-10°, 20°-30°, 30°-40° and subvertical.
							>20							
							7.1							
				96	95	73			9.68	-0.90	10.00			
									T2101					

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 24/06/2008

CHECKED KEN MA

DATE 25/06/2008

REMARKS

1. 2 nos. of inspection pits were dug to 0.80m and 1.70m depths.
2. Impression packer test was carried out at 12.50m-14.00m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D047**

SHEET **2** of **2**

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835177.06 N 812034.81	PROJECT No. J3086
MACHINE & No. DR67		DATE from 18/06/2008 to 23/06/2008
FLUSHING MEDIUM WATER	ORIENTATION **Vertical**	GROUND LEVEL + 9.10 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				96	95	73			T2K01 10.49	-0.90	10.00		II	As sheet 1 of 2.
20/06/2008		6.52m at 18:00												
21/06/2008		6.60m at 08:00		100	87	51	19.4							
							6.8		T2K01 11.31					
				98	91	71								
							20.0		T2K01 12.38					
							9.2							
				100	97	95								
				98	92	69			T2K01 13.29					
							7.1			-4.71	13.81		II	Strong, dark grey, slightly decomposed crystal bearing, fine ash vitric TUFF with closely to medium, locally very closely spaced, rough and smooth planar, tight to extremely narrow, slightly calcite coated and clean joints dipping 0°-10°, 20°-30°, 30°-40° and subvertical. Core with occasional micro-fractures. 14.22 - 18.94m: Core with some subvertical micro-fractures.
				100	100	89			T2K01 14.12	-5.12	14.22			
			60											
				100	100	83			T2K01 15.38					
							>20							
							4.9		T2K01 16.28					
				98	86	67								
							9.5		T2K01 17.62					
21/06/2008		6.80m at 18:00												
23/06/2008		6.50m at 08:00		98	99	51	12.1							
				100	79	65			T2K01 18.32					
							18.2							
23/06/2008		18:00							18.94	-9.84	18.94			End of hole at 18.94m depth.
											20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED **T T FUNG**

DATE **24/06/2008**

CHECKED **KEN MA**

DATE **25/06/2008**

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D048**

SHEET 1 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835462.12 N 812127.14	PROJECT No. J3086
MACHINE & No. DR08		DATE from 11/03/2008 to 14/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.39 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
11/03/2008	PX	08:00								7.39 / 7.24	0.00 / 0.15			Black, ASPHALT surface.
									A 0.45 0.50	6.89	0.50			Brown, subangular medium to coarse GRAVEL of rock fragments in sand matrix. (FILL)
									B 0.95 1.00					Brown and reddish brown, silty fine to coarse SAND with occasional angular fine gravel of rock fragments. (FILL)
	PX 1.50 HX								C 1.45 1.50					
									D 1.95 2.00	5.39	2.00			
									E 2.45 2.50					Brown, angular medium to coarse GRAVEL of rock fragments in silty sand matrix. (FILL)
		Dry at 18:00												
11/03/2008									F 2.95 3.00					
12/03/2008		Dry at 08:00		30					1					
									2 3.60 3.70	3.69	3.70			
				58					T2101					Brownish pink and dark grey, angular coarse GRAVEL and COBBLE of tuff and monzonite. (FILL)
								1,1 1,1,1,1 N=4	3 4.10	3.29	4.10			
									4 4.50 4.55					Soft, dark greyish brown, very sandy, clayey SILT with much subangular fine gravel of rock, occasional brick and broken shell fragments. (FILL)
			70	0					5.00	2.39	5.00			Dark grey and brown, angular medium to coarse GRAVEL of tuff. (FILL)
									5 6.00 6.10					
								1,3 4,4,6,8 N=22	6 6.60	0.79	6.60		V	Extremely weak, white to light brown, completely decomposed TUFF. (Stiff, SILT)
									7 7.00 7.05					
				100					8 7.50					
									9 8.50 8.60					
								2,3 4,4,5,7 N=20	10 9.10					
									11 9.50 9.55	-2.61	10.00			

INSPECTION PIT

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 15/03/2008

CHECKED KEN MA

DATE 17/03/2008

REMARKS

1. Inspection pit was dug to 3.00m depth.
2. Packer (Water Absorption) test was carried out at 13.00m-14.50m depth.

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D048**

SHEET 2 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES E 835462.12 N 812127.14	PROJECT No. J3086
MACHINE & No. DR08		DATE from 11/03/2008 to 14/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.39 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
				100					12 10.00	-2.61	10.00		V	As sheet 1 of 3.
	HX 11.23	5.10m at 18:00							13 11.00 11.10					
12/03/2008										-3.84	11.23			
13/03/2008		6.00m at 08:00		94	66	12	10.1		11.23 T2101				III	Moderately strong to strong, grey, mottled greyish brown, moderately to slightly decomposed clast bearing fine ash vitric TUFF with highly fractured and very closely to closely spaced, rough and smooth, planar and undulating, tight to extremely narrow, chlorite and iron stained, slightly kaolin coated joints, dipping 0°-10°, 30°-40°, 70°-80° and subvertical.
										-5.07	12.46		III/II	11.23 - 12.46m: Moderately strong, white, streaked brown, moderately decomposed.
				100	55	13			12.77 T2101					
							>20							
							12.3		14.15 T2101					
				100	91	59								
			70						15.63 T2101	-8.06	15.45		III	Moderately strong, brownish pink and pale pink, moderately decomposed medium grained SYENITE with very closely and medium spaced, rough and smooth, planar and undulating, tight to extremely narrow, chlorite and slightly kaolin coated joints, dipping 0°-10°, 20°-30°, 60°-70° and subvertical.
				98	46	0								15.45 - 17.70m: Slightly chloritized.
							7.0		16.57 T2101					
				100	94	71								
		6.18m at 18:00							18.00 T2101	-10.31	17.70			
13/03/2008														
14/03/2008		6.05m at 08:00		99	95	76								
							3.9		19.43 T2101	-11.56	18.95		II	Strong, dark grey to grey, slightly decomposed fine ash vitric TUFF with closely to medium spaced, rough planar and undulating, tight, slightly calcite coated and clean joints, dipping 0°-10°, 20°-30°, 40°-50° and 70°-80°.
				100	100	73				-12.61	20.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 15/03/2008

CHECKED KEN MA

DATE 17/03/2008

REMARKS

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Gammon Construction Limited

Ground Engineering & Substructure Department

DRILLHOLE RECORD

DRILLHOLE No. **1024/SIL/D048**

SHEET 3 of 3

CONTRACT NO. NEX/1024

Project Title Ground Investigation For South Island Line

METHOD Rotary	CO-ORDINATES	PROJECT No. J3086
MACHINE & No. DR08	E 835462.12 N 812127.14	DATE from 11/03/2008 to 14/03/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL + 7.39 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				100	100	73				-12.61	20.00		II	As sheet 2 of 3.
			70	93	76	49	12.2		T2101 20.60 T2101 21.30					
14/03/2008		18:00								-13.91	21.30			End of hole at 21.30m depth.
											30.00			

- Small disturbed sample
- Large disturbed sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Water sample
- Piezometer / standpipe tip
- Standard penetration test
- Water absorption (Packer) test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T T FUNG

DATE 15/03/2008

CHECKED KEN MA

DATE 17/03/2008

REMARKS

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FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D229

CONTRACT No.: MTR contract 912

SHEET: 1 of 2

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling	CO-ORDINATES:	WORKS ORDER No. N/A
MACHINE & No.: FDR-55	E 835720.35 N 812189.49	DATE from: 23/11/2009 to 25/11/2009
FLUSHING MEDIUM: Water	ORIENTATION: Vertical	GROUND LEVEL + 6.87 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	T C R %	S C R %	R Q D %	F I	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
23/11/2009												6.87	0.00			Soft to firm, light yellowish brown (2.5Y/6/4), sandy SILT with some subangular fine to coarse gravel of weak to strong tuff. (FILL)
									1	±	0.55					
									2	±	1.00					
									3	±	1.45					
									4	±	1.95					
									5	±	2.50					
									INSPECTION PIT							
									6	±	3.00					
									7	±	3.50					
									8	±	3.95					
									9	±	4.45					
24/11/2009									10	±	5.00	1.87	5.00			
			60	57					TC-110		5.60					Grey (7.5YR/6/1) to dark grey (5YR/4/1), angular coarse GRAVEL and COBBLES of strong granite, tuff and concrete. (FILL)
			60	46					TC-110		6.57	0.17	6.70			
			60	70					TC-110		7.28	-0.41	7.28			Grey (7.5YR/6/1), angular BOULDERS of strong tuff. (FILL)
			60	85					TC-110		8.05	-0.51	7.38			7.28 - 7.38m : Grey (7.5YR/6/1) and yellowish brown (10YR/5/6), angular coarse GRAVEL of strong granite and tuff.
			60	57					TC-110		8.60					
			60	70					TC-110		9.56					
			60	75					TC-110		10.00	-3.13	10.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang

DATE 27/11/2009

CHECKED A.B-Hollinshead

DATE 02/12/2009

REMARKS

1. An inspection pit was excavated to a depth of 5.00m.

FGS Job No.: 09 0042 03

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D229

CONTRACT No.: MTR contract 912

SHEET: 2 of 2

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling

CO-ORDINATES:
E 835720.35
N 812189.49

WORKS ORDER No. N/A

MACHINE & No.: FDR-55

DATE from: 23/11/2009 to 25/11/2009

FLUSHING MEDIUM: Water

ORIENTATION: Vertical

GROUND LEVEL + 6.87 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	T C R %	S C R %	R Q D %	F I	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
				61								-3.13	10.00		V	Extremely weak, greyish brown (10YR/5/2), spotted white, completely decomposed QUARTZ MONZONITE. (Soft to firm, sandy clayey SILT)
11			60						11							
									12		10.97	-4.10	10.97		II	Strong, grey, spotted black, slightly decomposed QUARTZ MONZONITE. Joints are closely to medium spaced, rough planar, extremely narrow, iron oxide stained, dipping at 15°-25°, 65°-75° and subvertical.
12		5.00m at 18:00 24/11/2009	60	100	72	72	3.3			T2101						
		5.00m at 08:00 25/11/2009									12.42					
13			60	100	100	100				T2101						
											13.65					
14			60	100	100	100	1.8			T2101						
											15.20					
15																
16			60	100	100	86	5.1			T2101						
		5.00m at 12:00 25/11/2009									16.72	-9.85	16.72			End of investigation hole at 16.72m.
17																
18																
19																
20													20.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang
DATE 27/11/2009
CHECKED A.B-Hollinshead
DATE 02/12/2009

REMARKS

FGS Job No.: 09 0042 03

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D230

CONTRACT No.: MTR contract 912

SHEET: 1 of 3

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling	CO-ORDINATES:	WORKS ORDER No. N/A
MACHINE & No.: FDR-14	E 835585.56 N 812166.84	DATE from: 19/06/2009 to 27/06/2009
FLUSHING MEDIUM: Water	ORIENTATION: Vertical	GROUND LEVEL + 8.04 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
19/06/2009	SW											8.04	0.00			
									1	INSPECTION PIT	0.50					Firm, light yellowish brown (2.5Y/6/4), sandy SILT with some angular fine to coarse gravel of strong tuff. (FILL)
1									2		0.50					
									3		1.30	6.74	1.30			
				70						T6-18	1.80					Grey (7.5YR/6/1), angular coarse GRAVEL and COBBLES of strong tuff. (FILL)
2				70						T6-18	2.20					
	SW 2.70			80						T6-18	2.70					
	PW			100					4			5.34	2.70			
3																Firm, greyish yellow (2.5Y/7/3), sandy SILT with some angular fine to medium gravel of moderately strong to strong tuff. (FILL)
		2.00m at 18:00							5		3.70					
19/06/2009									6		3.80					
20/06/2009 4		2.10m at 06:00						4, 3, 2, 2, 2, 3 N=9	7		4.20					
									8		4.70					
5				100												
	PW 5.80								9		5.80	2.24	5.80			
	HW									T2/01						Light grey (10R/7/1), BOULDERS of strong tuff. (FILL)
6				58												
				30					10		6.70	1.34	6.70			
7																Firm, light yellowish brown (2.5Y/6/4), sandy SILT with some angular fine to coarse gravel of moderately strong tuff and brick. (FILL)
									11		7.70 7.80					
8				0												
									12		8.80	-0.86	8.90			
9				80					13		8.90			V		Extremely weak, greyish yellow (2.5Y/7/3), completely decomposed coarse ash crystal TUFF. (Soft, slightly sandy SILT)
								k=2.54E-6m/s								
		3.40m at 18:00							14		9.99	-1.95	10.00			
10																
20/06/2009																

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang

DATE 14/07/2009

CHECKED A.B-Hollinshead

DATE 15/07/2009

REMARKS

1. An inspection pit was excavated to a depth of 1.30m.
2. Falling head permeability tests were performed from 8.50m to 10.00m and 14.70m to 16.20m below existing ground level on 22/06/2009 and 23/06/2009.
3. Acoustic borehole televiewer survey test was performed from 18.00m to 23.57m below existing ground level on 27/06/2009.

FUGRO GEOTECHNICAL SERVICES LTD	DRILLHOLE RECORD	HOLE No. 912/SIL/D230
	CONTRACT No.: MTR contract 912	SHEET: 2 of 3

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling	CO-ORDINATES:	WORKS ORDER No. N/A
MACHINE & No.: FDR-14	E 835585.56 N 812166.84	DATE from: 19/06/2009 to 27/06/2009
FLUSHING MEDIUM: Water	ORIENTATION: Vertical	GROUND LEVEL + 8.04 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
22/06/2009		5.70m at 08:00						1, 2, 1, 2, 2, 2 N=7	15		10.10				V	As sheet 1 of 3.
									16		10.43					
11				70					17		10.90					
									18		11.80					
12				65					19		12.00	-3.96	12.00		V	Extremely weak, dark yellowish brown (10YR/4/6), completely decomposed coarse ash crystal TUFF. (Silty coarse SAND with some fine to medium gravel)
									20		13.00					
13								3, 4, 5, 8, 10, 12 N=35	21		13.10 13.20					
									22		13.53					
14				65					23		14.00					
									24		15.00	-6.96	15.00		IV	
15				90					25		15.10					Weak, dark yellowish brown, highly decomposed coarse ash crystal TUFF. (Recovered as sandy angular coarse gravel)
								k=1.34E-5m/s								
16		6.10m at 16:00							26		16.10 16.20					
22/06/2009 26/06/2009		6.10m at 08:00						16, 34 / 65mm, 100 / 70mm 100 bls / 70mm	27		16.30 16.41					
17				100					28							
									29		17.10					
			60	70	50	50	NI NR		30		17.40	-9.56	17.60		V	
											17.50	-9.71	17.75		II	17.60-17.75m : No recovery, assumed to be completely decomposed TUFF.
18	HW 18.00								T2101		18.00					Strong to very strong, dark grey, slightly decomposed coarse ash crystal TUFF.
			80	100	100	100			T2101							Joints are medium to widely spaced, rough planar, extremely narrow, chlorite, slightly coated, dipping at 5°-15° and 65°-75°.
19									T2101		19.31					
									T2101			-11.96	20.00			
20																

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang
DATE 14/07/2009
CHECKED A.B-Hollinshead
DATE 15/07/2009

REMARKS

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D230

CONTRACT No.: MTR contract 912

SHEET: 3 of 3

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling

CO-ORDINATES:
E 835585.56
N 812166.84

WORKS ORDER No. N/A

MACHINE & No.: FDR-14

DATE from: 19/06/2009 to 27/06/2009

FLUSHING MEDIUM: Water

ORIENTATION: Vertical

GROUND LEVEL + 8.04 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
			80	100	100	100	0.9		T2101 20.76				II	As sheet 2 of 3.
21			80	100	100	100			T2101 22.31					
22														
23		6.10m at 18:00 20/06/2009	80	100	100	100			T2101 23.57	-15.53	23.57			
24														End of investigation hole at 23.57m.
25														
26														
27														
28														
29														
30											30.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang
DATE 14/07/2009
CHECKED A.B-Hollinshead
DATE 15/07/2009

REMARKS

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D233

CONTRACT No.: MTR contract 912

SHEET: 1 of 2

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling

CO-ORDINATES:
E 835200.21
N 812099.85

WORKS ORDER No. N/A

MACHINE & No.: FDR-55

DATE from: 19/09/2009 to 22/09/2009

FLUSHING MEDIUM: Water

ORIENTATION: Vertical

GROUND LEVEL + 4.76 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
19/09/2009	PW.											4.56	0.20			Grey, CONCRETE SLAB.
									1	H	0.65					Firm, light yellowish brown (2.5Y/6/4), sandy SILT with some angular fine to medium gravel of weak to moderately strong rock fragments. (FILL)
									2	H	0.95					
									3	H	1.55					
									4	H	2.55					
									5	H	2.65					
19/09/2009 21/09/2009				0					6	H	2.85 3.00					
									7		3.30	1.46	3.30			
				98					T6-II3		4.50					Grey (7.5YR/6/1), angular medium to coarse GRAVEL and COBBLES of moderately strong to strong tuff. (FILL)
	PW 4.60 HW											0.46	4.30			
				66					T6-II3		5.10	-0.34				Light yellowish brown (2.5Y/6/4), angular medium to coarse GRAVEL and COBBLES of weak, moderately strong to strong tuff fragments with some matrix of sandy silt. (ALLUVIUM)
	HW 5.57				0	0	NI		T2I01		5.57	-0.74	5.50		IV	Weak, light yellowish brown, highly decomposed fine ash vitric TUFF. (Recovered as angular fine to coarse gravel)
			60	100	100	49									II	Strong, grey, slightly decomposed fine ash vitric TUFF with a cataclastic texture.
			80	100	100	100			T2I01		6.44					Joints are closely to medium spaced, stepped, extremely narrow, iron and manganese oxide stained, chlorite coated, dipping at 5°-15°, 25°-35°, 40°-50° and 65°-75°.
			80	100	100	64	7.0		T2I01		6.96					
									T2I01		7.66					
			60	100	100	80			T2I01		8.74					
			0	100	100	63	>20		T2I01		9.86	-5.24	10.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang

DATE 22/09/2009

CHECKED A.B-Hollinshead

DATE 08/10/2009

REMARKS

1. An inspection pit was excavated to a depth of 3.00m.
2. Optical borehole televiewer survey test was performed from 5.62m to 12.17m below existing ground level on 22/09/2009.

FGS Job No.: 09 0042 03

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D233

CONTRACT No.: MTR contract 912

SHEET: 2 of 2

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling

MACHINE & No.: FDR-55

FLUSHING MEDIUM: Water

CO-ORDINATES:
E 835200.21
N 812099.85

ORIENTATION: Vertical

WORKS ORDER No. N/A

DATE from: 19/09/2009 to 22/09/2009

GROUND LEVEL + 4.76 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR%	SCR%	RQD%	FI	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
			0	100	100	23	1.9		T201 10.73				II	As sheet 1 of 2.
11			0	100	100	100			T201 12.17	-7.41	12.17			
12 21/09/2009														End of investigation hole at 12.17m.
13														
14														
15														
16														
17														
18														
19														
20											20.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang
DATE 22/09/2009
CHECKED A.B-Hollinshead
DATE 08/10/2009

REMARKS

FGS Job No.: 09 0042 03

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D234

CONTRACT No.: MTR contract 912

SHEET: 1 of 2

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling

CO-ORDINATES:
E 835118.86
N 812078.66

WORKS ORDER No. N/A

MACHINE & No.: FDR-55

DATE from: 08/06/2009 to 11/06/2009

FLUSHING MEDIUM: Water

ORIENTATION: Vertical

GROUND LEVEL + 4.72 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	T C R %	S C R %	R Q D %	F I	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
08/06/2009	HW									4.72	0.00			Grey, CONCRETE SLAB.
									1 INSPECTION PIT 0.85	4.42	0.30			Firm, yellowish brown (10YR/5/6), sandy SILT with much an gular fine to medium gravel of moderately strong granite and tuff. (FILL)
09/06/2009										3.67	0.85		II	Strong, light grey, slightly decomposed fine ash vitric TUFF with very closely to closely spaced incipient joints.
	HW 1.60		80	100	100	48			T2101 1.60					Open joints are closely to medium spaced, rough planar and stepped, extremely narrow, iron and manganese oxide stained, dipping at 10°-20°, 20°-30° and subvertical.
2			80	100	100	94	5.2		T2101 2.70					
3			80	100	100	100			T2101 4.16	0.82	3.90			
4													II	Strong to very strong, grey, slightly decomposed fine ash vitric TUFF.
5			80	100	100	100			T2101 5.67					Joints are widely spaced, rough planar, extremely narrow, clean, calcite coated, dipping at 10°-20° and subvertical.
6			80	100	100	100	0.5		T2101 7.21					
7														
8		0.80m at 18:00	60	100	100	100			T2101 8.20					
09/06/2009 10/06/2009		0.80m at 09:00												
9			60	100	100	100			T2101 9.58					
							1.5							
10										-5.28	10.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang

DATE 11/06/2009

CHECKED A.B-Hollinshead

DATE 24/06/2009

REMARKS

1. An inspection pit was excavated to a depth of 0.85m.
2. Acoustic borehole televiewer survey test was performed from 1.58m to 10.96m below existing ground level on 11/06/2009.

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. 912/SIL/D234

CONTRACT No.: MTR contract 912

SHEET: 2 of 2

PROJECT: Ground Investigation for South Island Line (East)

METHOD: Rotary Drilling

CO-ORDINATES: E 835118.86 N 812078.66

WORKS ORDER No. N/A

MACHINE & No.: FDR-55

DATE from: 08/06/2009 to 11/06/2009

FLUSHING MEDIUM: Water

ORIENTATION: Vertical

GROUND LEVEL + 4.72 mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	T C R %	S C R %	R Q D %	F I	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
11		0.60m at 18:00	80	100	100	100			T2101 11.07	-5.28 -6.35	10.00 11.07		II	As sheet 1 of 2.
														End of investigation hole at 11.07m.
12														
13														
14														
15														
16														
17														
18														
19														
20											20.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang

DATE 11/06/2009

CHECKED A.B-Hollinshead

DATE 24/06/2009

REMARKS

FUGRO GEOTECHNICAL SERVICES LTD	DRILLHOLE RECORD	HOLE No. 912/SIL/D235
	CONTRACT No.: MTR contract 912	SHEET: 1 of 2

PROJECT: **Ground Investigation for South Island Line (East)**

METHOD: **Rotary Drilling**	CO-ORDINATES: E 835058.73 N 812072.13	WORKS ORDER No. **N/A**
MACHINE & No.: **FDR-55**		DATE from: **19/06/2009** to **23/06/2009**
FLUSHING MEDIUM: **Water**	ORIENTATION: **Vertical**	GROUND LEVEL **+ 4.74** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples No.	Type	Depth	Reduced Level	Depth (m)	Legend	Grade	Description
19/06/2009	HW											4.74	0.00			Firm, light grey (10R/7/1) and light yellowish brown (2.5Y/6/4), sandy SILT with some angular fine to medium gravel of weak to moderately strong tuff. (FILL)
				90					6		2.85 3.00	1.74	3.00		V	Extremely weak, light yellowish brown (2.5Y/6/4), completely decomposed fine ash vitric TUFF. (Firm, sandy SILT with some fine to medium gravel)
4		2.00m at 18:00							8		4.00 4.10 4.20					
19/06/2009 20/06/2009		1.50m at 08:00						2, 2, 6, 35, 59 / 50mm 100 blows / 200mm	9		4.40 4.45	0.29	4.45		II	Strong to very strong, grey, slightly decomposed fine ash vitric TUFF.
5			80	100	100	72	6.0		10	T2101	5.61					Joints are very closely to closely spaced, smooth planar, extremely narrow, iron and manganese oxide stained, dipping at 0°-10° and 65°-75°.
6	HW 6.40		80	42	42	38	NR			T2101	6.40	-1.20 -1.66	5.94 6.40		V	5.94 - 6.40m: No recovery, assumed to be completely decomposed TUFF.
7			80	100	100	100				T2101	7.62				II	Strong to very strong, grey, slightly decomposed fine ash vitric TUFF. Joints are closely to medium spaced, smooth planar and rough planar, extremely narrow, iron and manganese oxide stained, dipping at 5°-15°, 35°-45° and 65°-75°.
8		2.00m at 18:00	80	100	100	82	2.5			T2101	8.27					
20/06/2009 22/06/2009		1.60m at 08:00														
9			80	100	100	100				T2101	9.60					
10												-5.26	10.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED P. Zhang
DATE 29/06/2009
CHECKED A.B-Hollinshead
DATE 09/07/2009

REMARKS
1. An inspection pit was excavated to a depth of 3.00m.
2. Acoustic borehole televiewer survey test was performed from 6.45m to 12.11m below existing ground level on 23/06/2009.

FUGRO GEOTECHNICAL SERVICES LTD

DRILLHOLE RECORD

HOLE No. **912/SIL/D235**

CONTRACT No.: **MTR contract 912**

SHEET: **2** of **2**

PROJECT: **Ground Investigation for South Island Line (East)**

METHOD: **Rotary Drilling**

MACHINE & No.: **FDR-55**

FLUSHING MEDIUM: **Water**

CO-ORDINATES:
E **835058.73**
N **812072.13**

ORIENTATION: **Vertical**

WORKS ORDER No. **N/A**

DATE from: **19/06/2009** to **23/06/2009**

GROUND LEVEL **+ 4.74** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples No. Type Depth	Reduced Level	Depth (m)	Legend	Grade	Description
11			80	100	100	97	3.7		T2101 11.05				II	As sheet 1 of 2.
12		2.00m at 18:00 22/06/2009	80	100	100	87			T2101 12.17	-5.26 -7.43	10.00 12.17			End of investigation hole at 12.17m.
13														
14														
15														
16														
17														
18														
19														
20											20.00			

Small Disturbed Sample
Piston sample
U76 Undisturbed Sample
U100 Undisturbed Sample
Mazier Sample
76mm Vibrocore Sample
100mm Vibrocore Sample
Vibrocore Sub-sample
SPT Liner Sample

Standard Penetration Test
In-situ Vane Shear Test
Permeability Test
Pressuremeter Test
Televiewer Survey
Packer Test
Impression Packer Test
Water Sample
Standpipe
Piezometer Tip

LOGGED **P. Zhang**

DATE **29/06/2009**

CHECKED **A.B-Hollinshead**

DATE **09/07/2009**

REMARKS

FGS Job No.: 09 0042 03

DRAFT

FUGRO GEOTECHNICAL SERVICES LTD

Project : **Ground Investigation for South Island Line (East)**

Contract No.: MTR contract 912 | WORKS ORDER No.: N/A

Logged by : W.P. Yiu
Date logged : 09/10/2009
Checked by : A.B-Hollinshead
Date checked : 28/10/2009

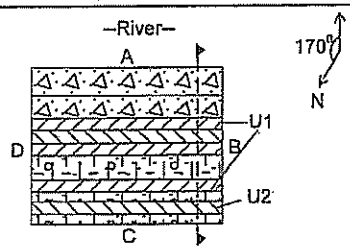
Co-ordinates :
E 835369.230 m
N 812162.350 m
Ground Level :
4.810 mPD

Excavation Dates:
29/09/2009 to 30/09/2009
Backfill Date:
12/10/2009

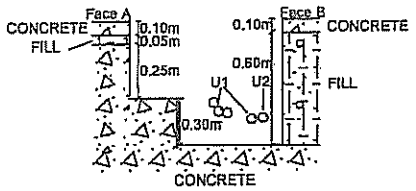
Trial Pit No.:
912/SIL/UTP04C-2

Sample & Tests	Depth (m)	Sketch (Face A 1.50 m / Face B 1.50 m / Face C 1.50 m / Face D 1.50 m)	Depth (m)	Legend (Face)	Grade	Description
	0.50	U1 U2 U2 U1	0.10			CONCRETE Slab.
	1.00		0.70			Soft to firm, brown, sandy clayey SILT with some angular fine to coarse gravel of moderately strong tuff and concrete. (FILL)
	1.50					Utilities: U1: 110mm grey PVC pipe x 4nos, 0.40m to 0.60m below ground. U2: 110mm blue PVC pipe x 1nos, 0.56m below ground.
	2.00					End of Trial Pit at 0.7m.
	2.50					
	3.00					
	3.50					
	4.00					
	4.50					

PLAN



SECTION



SYMBOL

- Disturbed Sample
- Undisturbed Sample Vert.
- Undisturbed Sample Hori.
- Block Sample
- In Situ Density Test
- Water Sample
- N - Schmidt Hammer Test
- Water Seepage

REMARKS

Shoring: No Water Seepage: No
Stability: Stable
Maximum Depth: 0.70m Average Depth: 0.60m

1. Engineer instructed to terminate at maximum depth of 0.70m (average volume: 1.50m x 1.50m x 0.60m) due to concrete slab encountered.

TRIAL PIT RECORD

FGS Job No.: 09 0042 03

Gammon Construction Limited
Ground Engineering & Substructure Department

TRIAL PIT RECORD

Project : Ground Investigation For South Island Line

Contract No. : NEX/1024 | Job No.: J3086

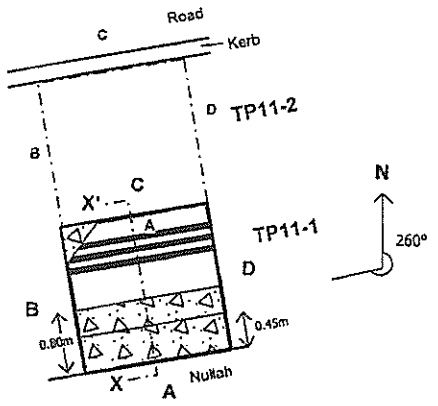
Logged by : T T FUNG
Date logged : 25/09/2008
Checked by : KEN MA
Date checked : 26/09/2008

Co-ordinates :
E 835119.06
N 812103.07
Ground Level :
+ 4.42 mPD

Excavation Dates:
23/09/2008 to 24/09/2008
Backfill Dates:
26/09/2008

Trial Pit No.
1024/SIL/TP11-1

Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	1.00	Face A 1.50 m; Face B 1.30 m; Face C 1.50 m; Face D 1.30 m	0.10		CONCRETE.	
	2.00		0.30		Dense, dry, light brown to brown, silty fine to medium SAND with much angular fine to coarse gravel and some cobble sized rock fragments. (FILL)	
	3.00				End of trial pit at 0.30m depth. (maximum 0.90m)	
	4.00				a. 5 nos. of blue, PVC tube (dia. 100mm) was encountered at 0.30m b.g.l. (PCCW) b. Red, cable (dia. 75mm) was encountered at 0.80m b.g.l. (HEC High Voltage Cable) c. Blue, cable (dia. 25mm) was encountered at 0.90m b.g.l. (HEC High Voltage Cable) d. 2 nos. of red, cables (dia. 75mm) was encountered at 0.80m b.g.l. (HEC High Voltage Cable) e. Concrete slab. (thick 20mm) f. Concrete slab. (thick 30mm)	



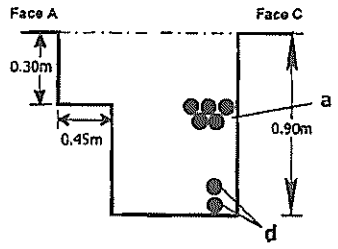
PLAN

SYMBOL

- Small disturbed sample
- Large disturbed sample
- Undisturbed vertical sample
- Undisturbed horizontal sample
- Block sample
- In-situ density test
- Water sample
- Water seepage
- N - Schmidt Hammer Test

PLAN

SECTION X - X'



REMARKS

1. No shoring installed.
2. No seepage observed.
3. In-situ density tests were carried out at 0.10m (3 nos.) and 0.40m (3 nos.) depths.

t:\gintw\library\1july2008.glb\private trial pit (1may06)

Gammon Construction Limited
Ground Engineering & Substructure Department

TRIAL PIT RECORD

Project : Ground Investigation For South Island Line

Contract No. : NEX/1024 | Job No.: J3086

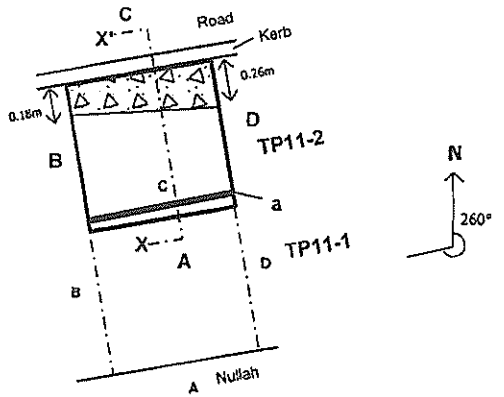
Logged by : T T FUNG
Date logged : 10/10/2008
Checked by : KEN MA
Date checked : 11/10/2008

Co-ordinates :
E 835118.80
N 812104.55
Ground Level :
+ 4.42 mPD

Excavation Dates:
08/10/2008 to 09/10/2008
Backfill Dates:
13/10/2008

Trial Pit No.
1024/SIL/TP11-2

Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
	1.00 2.00 3.00 4.00	Face A 1.50 m; Face B 0.90 m; Face C 1.50 m; Face D 0.90 m 0.18m 0.26m a	0.10 0.50		CONCRETE slab with plastic sheet underneath. Dense, dry, light brown to brown, silty fine to medium SAND with some angular fine to coarse gravel and occasional cobble sized rock fragments. (FILL) CONCRETE was encountered at the bottom of trial pit. End of trial pit at 0.50m depth. (maximum 0.50m) a. 2 nos. blue PVC tubes (dia. 100mm) were encountered at 0.30m b.g.l. (PCCW)	



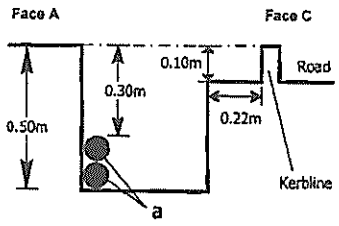
PLAN

SYMBOL

- Small disturbed sample
- Large disturbed sample
- Undisturbed vertical sample
- Undisturbed horizontal sample
- Block sample
- In-situ density test
- Water sample
- Water seepage
- N - Schmidt Hammer Test

PLAN

SECTION X - X'



REMARKS

1. No shoring installed.
2. No seepage observed.
3. In-situ density tests were carried out at 0.10m (3 nos.) and 0.30m (3 nos.) depths.

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Gammon Construction Limited
Ground Engineering & Substructure Department

TRIAL PIT RECORD

Project : Ground Investigation For South Island Line

Contract No. : NEX/1024 | Job No.: J3086

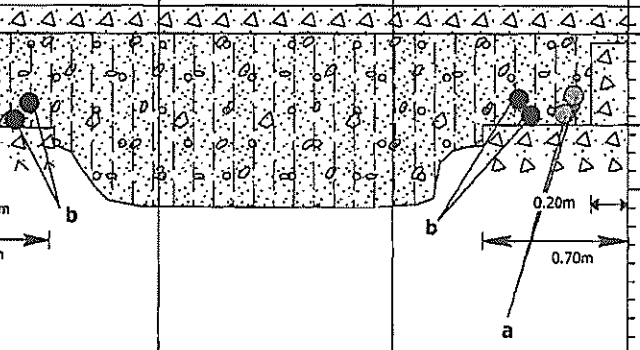
Logged by : T T FUNG
Date logged : 23/08/2008
Checked by : KEN MA
Date checked : 25/08/2008

Co-ordinates :
E 835243.22
N 812132.13
Ground Level :
+ 4.66 mPD

Excavation Dates:
22/08/2008 to 22/08/2008
Backfill Dates:
25/08/2008

Trial Pit No.
1024/SIL/TP12

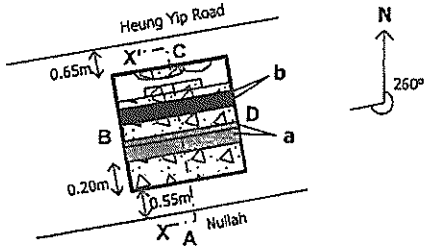
Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
		Face A 1.20 m / Face B 1.00 m / Face C 1.20 m / Face D 1.00 m	0.15		CONCRETE with plastic sheet underneath.	
	1.00		0.65		Dense, dry, brown, very silty fine to medium SAND with much angular to subangular fine to coarse gravel and some cobble sized rock fragments. (FILL)	
	2.00				Face C : Inspection pit was dug 300mm deep into Face C.	
	3.00				End of trial pit at 0.65m depth. (maximum 1.10m)	
	4.00				a. 2 nos. of grey, UPVC pipes (dia. 100mm) were encountered at 0.45m and 0.55m b.g.l. (New World Telecom)	
					b. 2 nos. of blue UPVC pipes (dia. 100mm) were encountered at 0.45m and 0.55m b.g.l. (Hutchison)	



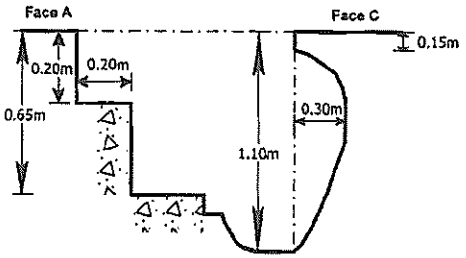
SYMBOL

- Small disturbed sample
- Large disturbed sample
- Undisturbed vertical sample
- Undisturbed horizontal sample
- Block sample
- In-situ density test
- Water sample
- Water seepage
- N - Schmidt Hammer Test

PLAN



SECTION X - X'



REMARKS

1. No shoring installed.
2. No seepage observed.
3. In-situ density tests were carried out at 0.10m (3 nos.), 0.40m (3 nos.) and 0.70m (3 nos.) depths.

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Gammon Construction Limited
Ground Engineering & Substructure Department

TRIAL PIT RECORD

Project : Ground Investigation For South Island Line

Contract No. : NEX/1024 | Job No.: J3086

Logged by : T T FUNG
Date logged : 24/09/2008
Checked by : KEN MA
Date checked : 25/09/2008

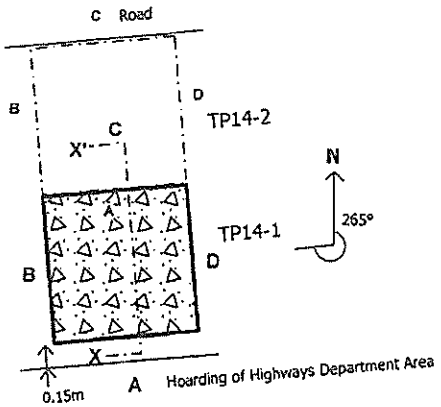
Co-ordinates :
E 835604.82
N 812194.02
Ground Level :
+ 6.21 mPD

Excavation Dates:
23/09/2008 to 23/09/2008
Backfill Dates:
26/09/2008

Trial Pit No.
1024/SIL/TP14-1

Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
		Face A 1.50 m / Face B 1.50 m / Face C 1.50 m / Face D 1.50 m	0.15		CONCRETE.	
					End of trial pit at 0.15m depth. (maximum 0.20m)	

1.00
2.00
3.00
4.00



PLAN

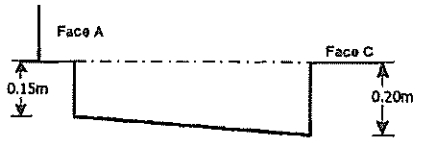
SYMBOL

- Small disturbed sample
- Large disturbed sample
- Undisturbed vertical sample
- Undisturbed horizontal sample
- Block sample
- In-situ density test
- Water sample
- Water seepage
- N - Schmidt Hammer Test

PLAN

SECTION X - X'

Hoarding of Highways Department Area



REMARKS

1. No shoring installed.
2. No seepage observed.

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Gammon Construction Limited
Ground Engineering & Substructure Department

TRIAL PIT RECORD

Project : Ground Investigation For South Island Line

Contract No. : NEX/1024 | Job No.: J3086

Logged by : T T FUNG
Date logged : 09/10/2008
Checked by : KEN MA
Date checked : 10/10/2008

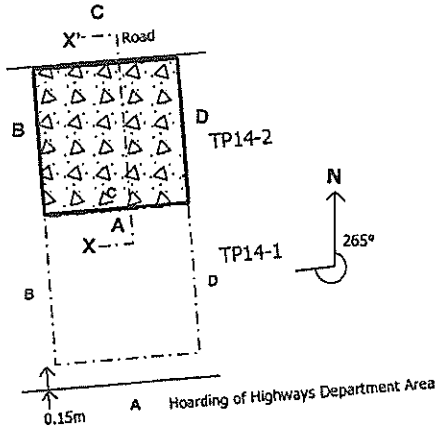
Co-ordinates :
E 835604.69
N 812195.51
Ground Level :
+ 6.20 mPD

Excavation Dates:
08/10/2008 to 08/10/2008
Backfill Dates:
13/10/2008

Trial Pit No.
1024/SIL/TP14-2

Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend	Description	Grade
		Face A 1.50 m / Face B 1.50 m / Face C 1.50 m / Face D 1.50 m	0.20		CONCRETE.	
					End of trial pit at 0.20m depth. (maximum 0.25m)	

1.00
2.00
3.00
4.00



PLAN

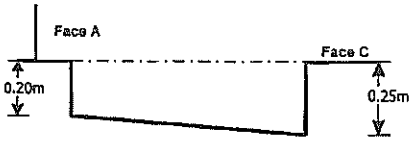
SYMBOL

- Small disturbed sample
- Large disturbed sample
- Undisturbed vertical sample
- Undisturbed horizontal sample
- Block sample
- In-situ density test
- Water sample
- Water seepage
- N - Schmidt Hammer Test

PLAN

SECTION X - X'

Hoarding of Highways Department Area



REMARKS

1. No shoring installed.
2. No seepage observed.

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FUGRO GEOTECHNICAL SERVICES LTD

Project : Ground Investigation for South Island Line (East)

Contract No.: MTR contract 912 | WORKS ORDER No.: N/A

Logged by : P. Zhang
Date logged : 05/06/2009
Checked by : A.B-Hollinshead
Date checked : 10/06/2009

Co-ordinates :
E 835098.79 m
N 812072.29 m
Ground Level : +6.70 mPD

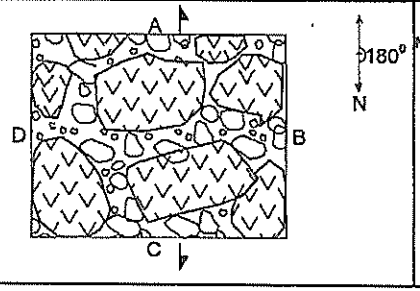
Excavation Dates:
04/06/2009 to 05/06/2009
Backfill Date: 10/06/2009

Trial Pit No.:
912/SIL/TP207

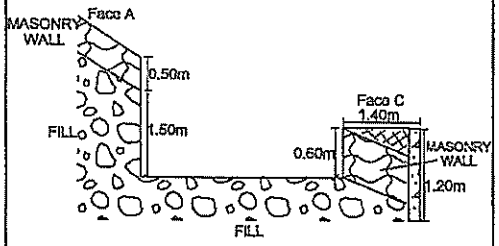
TRIAL PIT RECORD

Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend (Face D)	Grade	Description
	0.50	Face A 1.50 m / Face B 1.50 m / Face C 1.50 m / Face D 1.50 m; 50°	0.50			MASONRY WALL.
	1.00					Light yellowish brown (2.5Y/6/4) and grey (7.5YR/6/1), silty sandy angular COBBLES and BOULDERS (200-500mm) of moderately strong to strong tuff and occasional granite. (FILL)
	1.50					
	2.00		2.00			End of Trial Pit at 2.00m.
	2.50					
	3.00					
	3.50					
	4.00					
	4.50					

PLAN



SECTION



SYMBOL

- Disturbed Sample
- Undisturbed Sample Vert.
- Undisturbed Sample Horl.
- Block Sample
- In Situ Density Test
- Water Sample
- N - Schmidt Hammer Test
- Water Seepage

REMARKS

Shoring: Yes Water Seepage: No
Stability: Unstable
Maximum Depth: 2.00m Average Depth: 1.30m

1. All sample depths are relative to Face A.
2. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m and 2.00m below existing ground level.

FGS Job No.: 09 0042 03

FUGRO GEOTECHNICAL SERVICES LTD

Project : Ground Investigation for South Island Line (East)

Contract No.: MTR contract 912 | WORKS ORDER No.: N/A

Logged by : P. Zhang
Date logged : 02/07/2009
Checked by : A.B-Hollinshead
Date checked : 10/07/2009

Co-ordinates :
E 838955.00 m
N 808282.01 m
Ground Level : +30.82 mPD

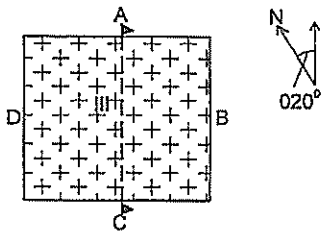
Excavation Dates: 25/06/2009 to 30/06/2009
Backfill Date: 18/07/2009

Trial Pit No.: **912/SIL/TP229**

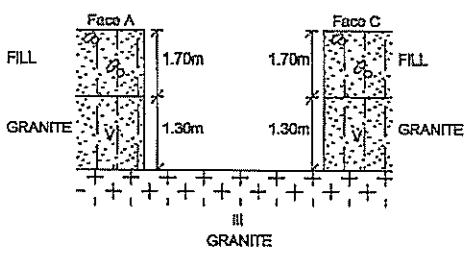
TRIAL PIT RECORD

Sample & Tests	Depth (m)	Sketch (Face A 1.50 m / Face B 1.50 m / Face C 1.50 m / Face D 1.50 m)	Depth (m)	Legend (Face D)	Grade	Description
1 2 3	0.50					Dense, moist, light yellowish brown (2.5Y/6/4), silty fine to coarse SAND with occasional angular fine to coarse gravel and cobbles of weak and moderately strong to strong granite. (FILL)
4	1.00					
5 6 7	1.50		1.70		V	Extremely weak, light yellowish brown (2.5Y/6/4), completely decomposed medium to coarse grained GRANITE. (Silty fine to coarse SAND) No relict joints can be measured
8	2.00					
9 10 11	2.50					
12	3.00		3.00			At the bottom : Moderately strong, light yellowish brown, moderately decomposed medium to coarse grained GRANITE. No joints encountered. End of Trial Pit at 3.00m.
	3.50					
	4.00					
	4.50					

PLAN



SECTION



SYMBOL

- Disturbed Sample
- Undisturbed Sample Vert.
- Undisturbed Sample Hori.
- Block Sample
- In Situ Density Test
- Water Sample
- N - Schmidt Hammer Test
- Water Seepage

REMARKS

Shoring: Yes Water Seepage: No

Stability: Stable

Maximum Depth: 3.00m Average Depth: 3.00m

1. All sample depths are relative to Face A.
2. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m, 2.00m, 2.50m and 3.00m below existing ground level.
3. Large disturbed samples were taken at 0.50m, 1.50m and 2.50m below existing ground level.
4. Block samples were taken at 0.50m, 1.50m and 2.50m below existing ground level.
5. In-situ density tests were performed at 0.50m, 1.50m and 2.50m below existing ground level.

FGS Job No.: 09 0042 03

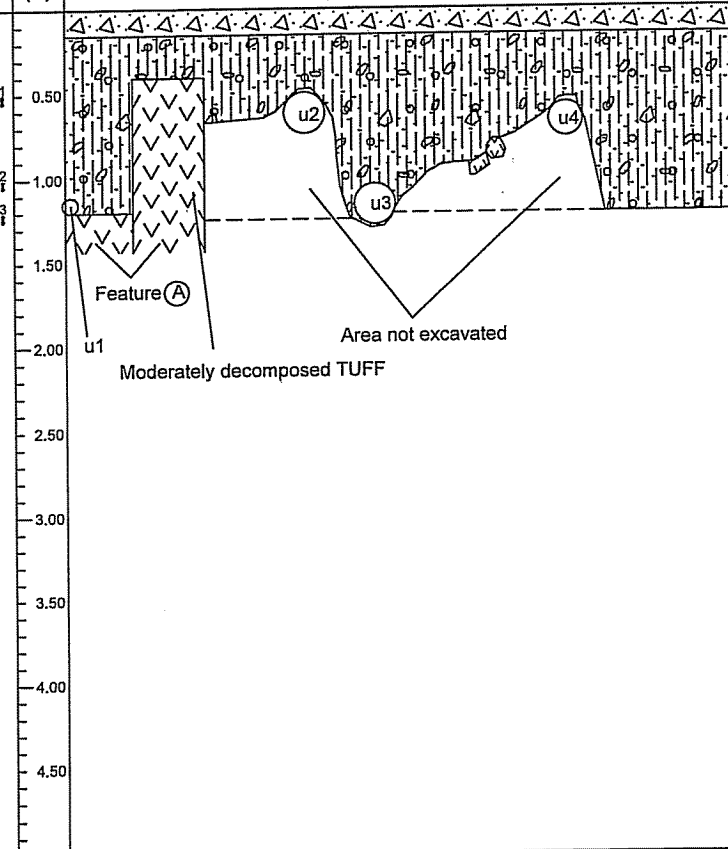
DRAFT

FUGRO GEOTECHNICAL SERVICES LTD

Contract No.: MTR contract 912	WORKS ORDER No.: N/A	Logged by : P. Zhang	Co-ordinates : (BB') E 835339.784 m N 812117.817 m	Co-ordinates : (DD') E 835338.911 m N 812121.753 m	Excavation Dates: 10/02/2010 to 10/02/2010	Trial Trench No.: 912/SIL/UTP77
Project : Ground Investigation for South Island Line (East)		Date logged : 23/02/2010	Ground Level : 5.67 mPD	Ground Level : 5.67 mPD	Backfill Date: 02/03/2010	
		Checked by A.B-Hollinshead				
		Date checked : 04/03/2010				

TRIAL TRENCH RECORD

Sample & Tests | Depth (m) | Sketch | Depth (m) | Legend (Face) | Grade | Description



150mm CONCRETE.

Firm, light yellowish brown (2.5Y/6/4), sandy SILT with some angular fine to coarse gravel, cobbles and occasional boulders (200-400mm) of moderately strong tuff and concrete. (FILL)

Utilities :

u1. Depth 1.10m, 0.00m from Face D, red cable 80mm diameter. (H.E.C.)

u2. Depth 0.40m, 1.70m from Face D, concrete pipe 250mm diameter.

u3. Depth 1.10m, 2.40m from Face D, ceramic pipe 250mm diameter.

u4. Depth 0.50m, 3.40m from Face D, ceramic pipe 200mm diameter.

0.40 - 1.50m: Face A, C and D: Feature A: Moderately strong, grey, moderately decomposed TUFF.

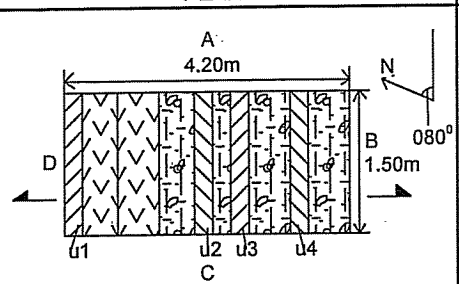
Joints are closely spaced, rough planar, extremely narrow, iron and manganese oxide stained, dipping at 1. 060°/82°, 2. 298°/78°, 3. 300°/78°.

End of Trial Trench at 1.20m.

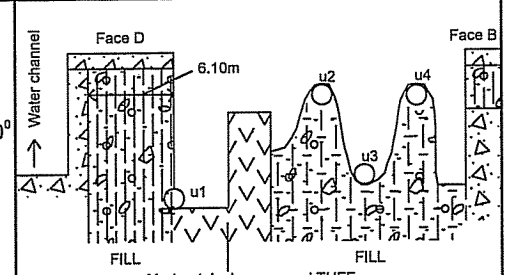
SYMBOL

- Small disturbed sample
- Large disturbed sample
- Undisturbed vertical sample
- Undisturbed horizontal sample
- Block sample
- In-situ density test
- Water sample
- Water seepage
- N - Schmidt Hammer Test

PLAN



SECTION (B - D)



REMARKS

Shoring: No Water Seepage: No

Stability: Unstable

Maximum Depth: 1.20m Average Depth: 1.00m

1. All sample depths are relative to Face A.
2. Small disturbed samples were taken at 0.50m, 1.00m and 1.20m below existing ground level.

FGS Job No.: 09 0042 03

DRAFT

FUGRO GEOTECHNICAL SERVICES LTD

Contract No.: MTR contract 912	WORKS ORDER No.: N/A	Logged by : P. Zhang	Co-ordinates : (BB') E 835339.784 m N 812117.817 m	Co-ordinates : (DD') E 835338.911 m N 812121.753 m	Excavation Dates: 10/02/2010 to 10/02/2010	Trial Trench No.: 912/SIL/UTP77
Project : Ground Investigation for South Island Line (East)		Date logged : 23/02/2010	Ground Level : 5.67 mPD	Ground Level : 5.67 mPD	Backfill Date: 02/03/2010	
		Checked by A.B-Hollinshead				
		Date checked : 04/03/2010				

TRIAL TRENCH RECORD

Sample & Tests	Depth (m)	Sketch	Depth (m)	Legend (Face)	Grade	Description
		Face C 4.20 m / Face D 1.50 m				
	0.50	u4, u2, u3	0.15			As sheet 1 of 2
	1.00		1.20			
	1.50	Area not excavated; Feature (A); Moderately decomposed TUFF				
	2.00					
	2.50					
	3.00					
	3.50					
	4.00					
	4.50					

SYMBOL	PLAN	SECTION (A - C)	REMARKS
Small disturbed sample; Large disturbed sample; Undisturbed vertical sample; Undisturbed horizontal sample; Block sample; In-situ density test; Water sample; Water seepage; N - Schmidt Hammer Test	As sheet 1 of 2	As sheet 1 of 2	As sheet 1 of 2

Sheet 2 of 2

FGS Job No.: 09 0042 03

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-130**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR06	E 835,191.14 N 812,095.73	DATE from 03.02.12 to 04.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.75 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.02.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.25	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
															Wash boring.
	5.16 HW			100				5.36		T2101 5.16	-0.41	5.16			Angular to subangular fine GRAVEL and COBBLE sized rock fragments. (FILL)
				100	100	82	12.0	5.86		T2101 5.38	-0.61	5.36			Strong, dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin infilling, dipping at 10°-20°, 20°-30°, 60°-70°, 70°-80° and occasional subvertical joint from 7.54-7.80m.
				100	100	47	8.6 16.7	6.21 6.51		T2101 6.08					
				100	100	91	6.3			T2101 6.76	-2.01	6.76		II	6.76- 9.54m: with some microfractures.
03.02.12		0.50m at 18:00						8.27		T2101 8.27					
04.02.12		0.50m at 08:00		100	100	80	10.0	9.07		T2101					
							>20	9.32		9.54	-4.79	9.54			
				100	100	77	2.4			TNW	-5.25	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.02.12

CHECKED EDWARD CHENG DATE 06.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-130**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR06	E 835,191.14 N 812,095.73	DATE from 03.02.12 to 04.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.75 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
04.02.12		0.50m at 18:00		100	100	77	17.0	10.14		TNW					As Sheet 1 of 2.
								10.61		10.78					
				99	93	53	8.0			TNW					
								11.48		11.48	-6.73	11.48			End of drillhole at 11.48m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.02.12

CHECKED EDWARD CHENG DATE 06.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-131**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,188.59 N 812,095.32	DATE from 02.02.12 to 03.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.72 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.02.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.22	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
	3.40 HW														Wash boring.
				100						T2101 3.40	+1.32	3.40			Angular to subangular GRAVEL and COBBLE sized rock fragments. (FILL)
				100						T2101 4.70					
				68						T2101 5.70					
								6.17		T2101 6.17	-1.45	6.17			Strong, dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin and chlorite infilling, dipping at 10°-20°, 20°-30°, 40°-50° and 70°-80°.
				100	100	66	8.6	7.10		T2101 7.30				II	
				100	100	57	>20	7.98		T2101 8.52					
		0.30m at 18:00		100	100	54	11.0	8.71		TNW 9.44					
02.02.12 03.02.12		0.90m at 08:00		100	100	85	12.1 5.6	9.62		TNW	-5.28	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.02.12

CHECKED EDWARD CHENG DATE 04.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-131**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,188.59 N 812,095.32	DATE from 02.02.12 to 03.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.72 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.02.12		0.40m at 18:00		100	100	85	5.6	10.51		TNW 10.51					As Sheet 1 of 2.
				100	100	47	14.3 >20	10.66 10.90		TNW				II	
				100	100	76	11.3	11.61		TNW 11.24 11.61	-6.89	11.61			End of drillhole at 11.61m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.02.12

CHECKED EDWARD CHENG DATE 04.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-132**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,186.34 N 812,094.89	DATE from 13.01.12 to 14.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.73 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13.01.12	PW	Dry at 08:00							A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.23	1.50			Loose, yellowish brown to reddish brown, coarse SAND with gravel sized rock fragments. (FILL)
	2.50 PW													Wash boring.
	HW			56					2.50 T2101 3.40	+2.23 +1.33	2.50 3.40			Dark grey to brown, angular to subangular COBBLE sized rock fragments. (FILL)
	7.28 HW													Wash boring.
				100	100	100	4.2		7.28 T2101 8.43	-2.55	7.28		II	Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough undulating locally smooth planar, very narrow, limonite, manganese, chlorite and kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90° with microfractures.
				99	99	99	7.0		T2101 9.75					
				99	85	65				-5.27	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.01.12

CHECKED EDWARD CHENG DATE 15.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-132**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,186.34 N 812,094.89	W.O. No.
MACHINE / No. DR10		DATE from 13.01.12 to 14.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.73 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							14.5								As Sheet 1 of 2.
							14.5								
				99	85	65		10.66		T2101					
							>20	10.82						II	
										11.14					
							6.5								
		3.85m at 18:00		99	94	82				T2101					
								11.90			-7.17	11.90			Moderately strong to strong, dark grey to greenish grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely spaced, rough planar to undulating, narrow to very narrow, limonite, manganese and chlorite stained, dipping at 10°-20° and 30°-40°.
13.01.12							10.0								
14.01.12		3.75m at 08:00						12.20		12.20					
				100	100	86	9.9			T2101				III/II	
14.01.12		3.80m at 18:00						13.31		13.31	-8.58	13.31			End of drillhole at 13.31m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.01.12

CHECKED EDWARD CHENG DATE 15.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-133**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,183.98 N 812,094.38	DATE from 31.01.12 to 01.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.21	1.50			Firm, yellowish brown, sandy clayey SILT with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
				80						T2101 1.50					Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
										2.40	+2.31	2.40			Wash boring.
31.01.12	5.89 HW	0.50m at 18:00													
01.02.12		0.50m at 08:00		100	11	0	NI	5.89		T2101 5.89	-1.18	5.89		IV	Weak, greyish brown spotted white and black, highly decomposed fine ash crystal TUFF.
				91	91	41	10.0	6.50		T2101 6.50	-1.79	6.50			Strong, grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are very closely to closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin infilling, dipping at 10°- 20°, 50°-60°, 60°-70° and 70°-80°.
				100	100	23	17.7	7.10 7.72		T2101 6.84					
				100	100	0	0.0	8.07		T2101 8.07				II	
				100	100	33	12.6	8.62		T2101 8.62					
				100	78	24	>20 19.4	9.49 9.62		T2101 9.62	-5.19 -5.29	9.90 10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.02.12

CHECKED EDWARD CHENG DATE 02.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-133**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,183.98 N 812,094.38	DATE from 31.01.12 to 01.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	78	24	19.4 0.0 18.8	10.24 10.34 10.66		T2101 10.66					9.90- 12.07m: with some microfractures.
				100	100	14	>20			T2101 11.44				II	
01.02.12		0.50m at 18:00		100	100	0		12.07		T2101 12.07	-7.36	12.07			End of drillhole at 12.07m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.02.12

CHECKED EDWARD CHENG DATE 02.02.12

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-134**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,181.61 N 812,093.78	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.73 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.23	1.50			Soft to firm, yellowish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
															Wash boring.
	5.62 HW							5.62		5.62	-0.89	5.62			
			100	8	0	NI				T2101				IV	Very weak, brownish grey, highly decomposed fine ash crystal TUFF.
								6.42		6.42	-1.69	6.42			
			100	100	64	18.4				T2101				IV/III	Weak to moderately weak, greyish brown, highly to moderately decomposed fine ash crystal TUFF. Joints are very closely to closely spaced, smooth planar, narrow, iron and manganese stained, kaolin infilling, dipping at 20°-30°, 60°-70° and subvertical joints from 6.42-6.67m, 6.52-6.90m and 7.55-7.80m.
							>20	7.29		7.29					
			100	86	0	11.1		7.33 7.42		T2101					
						N.I		7.77		7.80	-3.07	7.80			
			100	100	35	>20				T2101				II	Strong, grey spotted white and black, slightly decomposed fine ash TUFF. Joints are very closely to closely locally medium spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, kaolin and occasional calcite and chlorite infilling, dipping at 10°-20°, 20°-30° occasional 70°-80° and subvertical joints from 11.40-11.542m.
			100	100	29			8.93		8.49					
										T2101					
			100	100	77	10.0				9.11					
										T2101	-5.27	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-134**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,181.61 N 812,093.78	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.73 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.01.12		0.50m at 18:00		100	100	77	10.0 >20 15.2	11.02 11.19		10.06 T2101					As Sheet 1 of 2.
31.01.12		0.50m at 08:00		100	83	46	>20 12.2	11.52 11.69		11.52 T2101				II	
31.01.12		0.50m at 18:00		100	100	90		12.67		12.67 T2101 13.71	-8.98	13.71			End of drillhole at 13.71m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-135**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,179.36 N 812,093.36	DATE from 16.01.12 to 17.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.21	1.50			Stiff to firm, reddish brown to yellowish brown, slightly clayey sandy SILT with some gravel sized rock fragments. (FILL)
															Wash boring.
				90						T2101 2.30 3.30	+2.41 +1.41	2.30 3.30			Dark grey to brownish grey, angular to subangular COBBLE sized rock fragments. (FILL)
															Wash boring.
	6.17 HW							6.17			-1.46	6.17		IV/III	Moderately strong to moderately weak, yellowish grey to yellowish brown, highly to moderately decomposed fine ash TUFF.
		0.50m at 18:00		83	44	37	NI			T2101 6.17	-1.61	6.32		III	Moderately strong, yellowish grey to dark grey spotted black and white, moderately decomposed fine ash crystal TUFF. Joints are closely spaced, rough planar to undulating, very narrow, limonite and kaolin stained, dipping at 10°-20° and 60°-70°.
16.01.12							NR	7.10			-2.39	7.10		V	No recovery assumed to be completely decomposed TUFF.
17.01.12		1.00m at 08:00						7.29		T2101 7.29	-2.58	7.29			Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, rough planar to undulating, manganese, limonite and kaolin stained, dipping at 10°-20°, 30°-40°, 50°-60° and 70°-80° with some microfractures.
				98	66	61	9.2	8.05		T2101 8.69				II	
							>20	8.47							
							4.8								
				100	95	72	13.3	9.30		T2101	-5.29	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 17.01.12

CHECKED EDWARD CHENG DATE 18.01.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-135**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,179.36 N 812,093.36	DATE from 16.01.12 to 17.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	95	72	13.3	10.35		T2101 10.25	-5.64	10.35		II	As Sheet 1 of 2.
				99	21	9	>20	11.20		T2101 11.52	-6.49	11.20		III/II	Moderately strong to strong, dark grey spotted white, moderately to slightly decomposed fine ash crystal TUFF.
				100	83	57	10.8	12.22		T2101 12.22				II	Strong, dark grey spotted white, slightly decomposed fine to coarse ash crystal TUFF. Joints are closely to medium spaced, smooth planar to undulating, very narrow, kaolin and limonite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
				99	57	57	2.4	12.63		T2101 13.11	-8.40	13.11		II	
							0.0	12.90							
17.01.12		0.50m at 18:00		100	100	89	6.8	14.07		T2101 14.07	-9.36	14.07		II	Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, rough planar to smooth, very narrow, chlorite, manganese, limonite and kaolin stained, dipping at 10°-20° and 50°-60°.
															End of drillhole at 14.07m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 17.01.12

CHECKED EDWARD CHENG DATE 18.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-136**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,176.85 N 812,092.87	W.O. No.
MACHINE / No. DR10		DATE from 12.01.12 to 13.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.19	1.50			Loose to medium dense, brown to yellowish brown, gravelly silty SAND. (FILL)
															Wash boring.
				100					T2101	3.50 3.90	+1.19 +0.79	3.50 3.90			Dark grey to pale grey, angular to subangular COBBLE sized rock fragments. (FILL)
															Wash boring.
											-5.31	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 13.01.12

CHECKED EDWARD CHENG DATE 14.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-136**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,176.85 N 812,092.87	DATE from 12.01.12 to 13.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
	10.23 HW						NI	10.23		10.23	-5.54	10.23			As Sheet 1 of 2.
								10.43			-5.74	10.43		IV	Weak, yellowish grey to brown, highly decomposed fine ash TUFF.
				81	38	24	9.4			T2101	-6.06	10.75		III	
							NI	10.75			-6.19	10.88		IV/III	Moderately strong, pale grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, manganese and limonite stained, dipping at 10°-20° and 40°-50°.
							NR	10.88			-6.34	11.03		V	
				100	57	57		11.03		11.03 T2101					
							13.0			11.26	-6.57	11.26		III	
								11.57							Moderately weak to moderately strong, pale grey, highly to moderately decomposed fine ash TUFF.
				100	92	84	4.3			T2101				II	No recovery assumed to be completely decomposed TUFF.
								12.74		12.74	-8.02	12.71		III	Strong, greenish grey to pale grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, smooth undulating to planar, limonite, chlorite, manganese and kaolin stained, dipping at 10°-20°, 50°-60° and 80°-90°.
											-8.52	13.21			11.03- 11.26m: Moderately strong and moderately decomposed TUFF.
				100	100	100				T2101				II	
		0.50m at 18:00					3.2								12.71- 13.21m: Moderately strong and moderately decomposed TUFF.
12.01.12															
13.01.12		0.50m at 08:00								14.27	-9.58	14.27		III	14.27- 15.03m: Moderately strong and moderately decomposed TUFF.
				98	94	87				T2101					
								15.23			-10.34	15.03			
							12.0	15.48		15.48				II	
		0.50m at 18:00		100	87	78	9.4			T2101					
13.01.12								16.54		16.54	-11.85	16.54			End of drillhole at 16.54m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 13.01.12

CHECKED EDWARD CHENG DATE 14.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-137**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,174.59 N 812,092.25	DATE from 10.01.12 to 11.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.19	1.50			Firm to stiff, reddish brown, gravelly sandy SILT. (FILL)
															Wash boring.
				93					T2101	2.71 3.53	+1.98 +1.16	2.71 3.53			Dark grey, angular to subangular BOULDER sized rock fragments. (FILL)
															Wash boring.
											-5.31	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 11.01.12

CHECKED EDWARD CHENG DATE 12.01.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-137**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,174.59 N 812,092.25	DATE from 10.01.12 to 11.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
	10.22 HW										-5.53	10.22			As Sheet 1 of 2.
10.01.12		0.50m at 18:00		80	0	0				T2101 10.22 – 10.82				IV/III	Moderately weak to moderately strong, grey to yellowish grey, highly to moderately decomposed fine ash crystal TUFF, highly fractured.
11.01.12		0.50m at 08:00		100	77	63	11.9	10.82 11.41		T2101 10.82 – 11.77	-6.13	10.82			Strong, greenish grey to dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, smooth planar to undulating, chlorite and limonite stained, dipping at 40°-50° and 80°-90°.
				99	99	84				TNW 11.77 – 12.76					
				100	100	82	5.9			TNW 12.76 – 14.19				II	
							12.0	13.94 14.19							
				98	65	27	10.6			TNW 14.19 – 15.48					
							>20	15.13							
				97	0	0		15.67		TNW 15.48 – 15.84					
11.01.12		0.50m at 18:00		100	69	69	7.4	16.35		TNW 15.84 – 16.35	-11.66	16.35			
															End of drillhole at 16.35m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 11.01.12

CHECKED EDWARD CHENG DATE 12.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-138**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,172.24 N 812,091.72	W.O. No.
MACHINE / No. DR10		DATE from 13.01.12 to 16.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.18	1.50			Loose, yellowish brown, gravelly SAND. (FILL)
13.01.12	7.12 HW	0.50m at 18:00													Wash boring.
14.01.12		0.50m at 08:00		83						T2101 7.12	-2.44	7.12			Dark grey to brown, angular to subangular COBBLE sized rock fragments. (FILL)
								7.84		T2101 7.84	-3.16	7.84			Moderately weak to moderately strong, brown, highly to moderately decomposed fine ash crystal TUFF.
				78	0	0	NI			T2101 9.00	-4.32	9.00		IV/III	
				100	100	100	4.3	9.00		T2101 9.92	-5.32	10.00		III/II	Moderately strong to strong, dark grey to greenish grey locally brown, moderately to slightly decomposed fine ash crystal TUFF. Joints are medium to very closely spaced, smooth planar to undulating, kaolin coated, limonite stained, dipping at 30°-40°, 60°-70°
								9.92							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.01.12

CHECKED EDWARD CHENG DATE 17.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-138**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,172.24 N 812,091.72	DATE from 13.01.12 to 16.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	81	65	>20			T2 01					and 80°-90°.
							>20	10.26							
				100	81	65	6.1			T2 01				III/II	
								11.08		11.08	-6.40	11.08			
				99	81	53	20.0	11.58		TNW				II	Strong, dark grey to pale grey, slightly decomposed fine ash crystal TUFF. Joints are closely spaced, smooth planar and undulating, very narrow, clean, dipping at 10°-20°, 40°-50° and 80°-90°.
							9.0			11.94					
								12.36			-7.80	12.48			
				100	88	67	13.0	12.62		TNW				III/II	Moderately strong to strong, pale grey to dark grey spotted white, moderately to slightly decomposed fine to coarse ash crystal TUFF. Joints are closely spaced, rough planar, narrow to very narrow, chlorite, manganese and kaolin stained, dipping at 10°-20° and 50°-60°.
							10.3				-8.37	13.05			
		1.00m at 18:00		100	78	54	17.1	13.62		13.21 TNW 13.62				II	Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely spaced, smooth planar and undulating, chlorite and limonite stained, dipping at 10°-20° and 70°-80°.
14.01.12															
15.01.12		0.50m at 08:00					4.1								
				100	100	84		14.59		TNW					
		1.00m at 18:00					14.6								
15.01.12								15.00		15.00	-10.32	15.00			End of drillhole at 15.00m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.01.12

CHECKED EDWARD CHENG DATE 17.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-139**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,164.21 N 812,089.74	W.O. No.
MACHINE / No. DR10		DATE from 12.01.12 to 13.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.70 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.01.12	PW	Dry at 08:00								A 0.45 0.50					Stiff to firm, reddish brown, slightly clayey sandy SILT with some gravel sized rock fragments. (FILL)
										B 0.95 1.00					
										C 1.45 1.50	+3.20	1.50			
				71						T2101					Dark grey to pale grey and brown, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
											+2.35	2.35			Wash boring.
	2.96 PW														
	HW										+1.74	2.96			
				94						T2101					Dark grey to pale grey and brown, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
											+0.84	3.86			Wash boring.
	5.53 HW							5.53			-0.83	5.53		III/II	
							6.3				-1.31	6.01		IV	Moderately strong, dark grey spotted black and white, moderately decomposed coarse ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 10°-20° and 50°-60°.
				95	43	39		6.01		T2101	-1.51	6.21			Weak, brown, highly decomposed coarse ash TUFF.
12.01.12		3.91m at 18:00													
13.01.12		4.00m at 08:00					NI							IV/III	Moderately weak to moderately strong, yellowish brown spotted black and white, highly to moderately decomposed coarse ash TUFF.
				81	0	0				T2101					
								7.59							
				83	19	19	>20			T2101					
							NI	8.24 8.37			-3.67	8.37			
				100	62	20	14.5			T2101				III	Moderately strong, brownish grey to dark grey spotted black and white, moderately decomposed coarse ash TUFF. Joints are closely spaced, rough planar to undulating, very narrow to narrow, limonite, chlorite and kaolin stained, dipping at 10°-20°, 60°-70° and 80°-90°.
								9.13			-4.49	9.19			
				100	100	98	6.3			T2101				II	Strong, dark grey to greenish grey spotted white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar to undulating
											-5.30	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 13.01.12

CHECKED EDWARD CHENG DATE 14.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-139**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,164.21 N 812,089.74	DATE from 12.01.12 to 13.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.70 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	98	6.3	10.24		T2101					locally smooth, kaolin, chlorite and limonite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							6.7			10.52					
				100	100	100		11.13		T2101				II	
							6.0			12.02					
								12.30			-7.60	12.30			
				100	61	58	10.7	12.58		T2101				III	Moderately strong, greenish grey to brownish grey, moderately decomposed fine ash TUFF. Joints are very closely to closely spaced, rough undulating, narrow, chlorite, limonite and kaolin stained, dipping at 10°-20° and 50°-60°.
							>20			13.00	-8.42	13.12			
				100	52	0		13.29		T2101					
										13.29					Strong, dark grey to greenish grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough undulating and smooth, clean, dipping at 10°-20°, 50°-60° and 60°-70°.
13.01.12		3.50m at 18:00		100	82	58	8.3			T2101				II	
							>20	14.25							
								14.46		14.46	-9.76	14.46			End of drillhole at 14.46m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 13.01.12

CHECKED EDWARD CHENG DATE 14.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-140**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,161.58 N 812,089.27	W.O. No.
MACHINE / No. DR10		DATE from 14.01.12 to 16.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
14.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45					Loose, yellowish brown, gravelly fine to coarse SAND. (FILL)
	1.50 PW										+3.19	1.50			
	HW			72						T2116 1.50 – 2.70					Grey to yellowish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				81						T2116 2.70 – 3.50					
											+1.19	3.50			Wash boring.
14.01.12	6.01 HW	0.50m at 18:00						6.01			-1.32	6.01			
16.01.12		1.25m at 08:00		100	89	70	9.8	6.52		T2101 6.01 – 6.91				III	Moderately strong, brownish grey to yellowish grey, moderately decomposed coarse ash TUFF. Joints are closely spaced, smooth planar to undulating, limonite, kaolin and manganese stained, dipping at 10°-20°, 30°-40° and 80°-90°.
							15.4	6.91			-2.58	7.27			
				100	100	85	8.3	8.00		T2101 6.91 – 8.00				II	Strong, dark grey spotted white and yellowish grey, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, smooth planar to undulating, very narrow, chlorite, kaolin and limonite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							14.0	8.50		TNW 8.00 – 9.06					
				97	86	50	>20	8.81							
							10.0								
				100	100	80				TNW 9.06 –					
							12.6	9.81			-5.31	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.01.12

CHECKED EDWARD CHENG DATE 17.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-140**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,161.58 N 812,089.27	W.O. No.
MACHINE / No. DR10		DATE from 14.01.12 to 16.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.01.12		1.10m at 18:00		100	100	80	12.6	10.76		TNW 10.61				II	As Sheet 1 of 2.
				100	100	90	6.0	12.09		TNW 12.09	-7.40	12.09			End of drillhole at 12.09m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.01.12

CHECKED EDWARD CHENG DATE 17.01.12

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN 25032005.GDT 20.11.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-141**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,159.30 N 812,088.65	W.O. No.
MACHINE / No. DR10		DATE from 17.01.12 to 18.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
17.01.12	PW	Dry at 08:00								A 0.45 0.50					Firm, yellowish brown to reddish brown, sandy SILT with some coarse gravel sized rock fragments. (FILL)
										B 0.95 1.00					
										C 1.45 1.50	+3.18	1.50			
	1.90 PW														Wash boring.
	HW										+2.78	1.90			Dark grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				67						T2116 1.90					
										3.10	+1.58	3.10			Wash boring.
	5.40 HW							5.40			-0.72	5.40			
				60	0	0	NI	5.55		T2101 5.40 5.55	-0.87	5.55		IV/III	Moderately weak to moderately strong, yellowish grey to yellowish brown, highly to moderately decomposed fine ash crystal TUFF.
				100	83	83	10.8	6.29		T2101 6.20				III	Moderately strong to strong, dark grey to yellowish grey, moderately decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough planar and undulating, manganese, limonite and kaolin stained, dipping at 10°-20°, 60°-70° and 80°-90°.
				100	100	95	7.4	7.23		T2101	-2.00	6.68			
				99	99	99	3.5	7.51		T2101 7.51					Strong, dark grey spotted white and black, slightly decomposed coarse ash crystal TUFF. Joints are widely to medium spaced, smooth planar and rough, very narrow, limonite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							9.7	8.67							
				99	99	96	3.6	8.98		T2101 8.47				II	
17.01.12		3.10m at 18:00					8.9	9.54			-5.32	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.01.12

CHECKED EDWARD CHENG DATE 19.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105306 - MTRC 903.GPJ TYSAN_25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-141**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,159.30 N 812,088.65	DATE from 17.01.12 to 18.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.01.12		2.50m at 08:00		100	100	100		9.99		9.99					As Sheet 1 of 2.
							1.9			T2101				II	
										11.38					
				100	100	100				T2101					
18.01.12		3.20m at 18:00						12.68		12.68	-8.00	12.68			End of drillhole at 12.68m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 18.01.12	DATE 19.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-142**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,156.72 N 812,088.18	W.O. No.
MACHINE / No. DR09		DATE from 31.01.12 to 02.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.13	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
															Wash boring.
				100						2.99 T2116 3.49	+1.64	2.99			Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
		2.13m at 18:00									+1.19	3.44			Wash boring.
31.01.12	4.00 PW										+0.64	3.99			
01.02.12	HW	2.26m at 08:00		100						3.99 T2116 4.14	+0.52	4.11			Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL) Wash boring.
	5.40 HW							5.40		5.40 T2101 5.86 T2101 6.18	-0.77	5.40		III	Strong , dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin infilling, dipping at 10°-20°, 20°-30°, 40°-50° and 70°-80°. 5.40- 6.18m: Moderately decomposed TUFF.
				100	100	65	10.0	5.80							
				94	94	63	>20	6.18			-1.55	6.18			
				100	100	100	3.1			TNW 7.14					
				100	100	62	8.8	8.05		TNW 8.28				II	
				100	100	21	>20	8.88		TNW 8.86					
				100	100	85	5.0			TNW	-5.37	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.02.12

CHECKED EDWARD CHENG DATE 03.02.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-142**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,156.72 N 812,088.18	DATE from 31.01.12 to 02.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	85	5.0	10.48		TNW 10.24					As Sheet 1 of 2.
				100	100	83	10.2			TNW					
01.02.12		3.27m at 18:00		100	100	86				TNW 11.72				II	
02.02.12		3.62m at 08:00		100	100	44		12.15		TNW 12.00					
		3.30m at 18:00		100	100	100	14.3			TNW 12.78					
02.02.12								13.18		13.18	-8.55	13.18			End of drillhole at 13.18m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.02.12

CHECKED EDWARD CHENG DATE 03.02.12

REMARKS

DRILLHOLE LOG J1105306 - MTRC 903.GPJ TYSAN_25032005.GDT 20.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-143**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,154.37 N 812,087.62	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.01.12	PW	Dry at 08:00								A 0.45 0.50					Soft to firm, light brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
										B 0.95 1.00					
										C 1.45	+3.14	1.50			
										1.50					Wash boring.
										1.80	+2.84	1.80			
	2.30 PW			100					T2116	2.20					Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
	HW			100					T2116	2.72	+1.92	2.72			
															Wash boring.
										3.81	+0.83	3.81			
				100					T2116	4.11	+0.53	4.11			Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
															Wash boring.
	5.80 HW						NI	5.62 5.75		5.62	-0.98 -1.11	5.62 5.75		III	Angular to subangular fine GRAVEL sized rock fragments. (FILL)
		2.25m at 18:00		100	87	67	9.8		T2101						Moderately strong, light grey spotted white and black, moderately decomposed fine ash crystal TUFF. Joints are closely locally very closely spaced, smooth planar, narrow, iron and manganese stained, kaolin infilling, dipping at 20°-30° and subvertical joints from 6.11-6.26m.
30.01.12								6.57		6.57	-1.93	6.57			
31.01.12		3.16m at 08:00		100	95	95	6.5		T2101	7.59					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely to medium locally very closely and widely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, kaolin and occasional chlorite infilling, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80°, and occasional subvertical from 8.66-9.23m and 11.43-11.54m.
				100	100	87		8.58	TNW	8.66				II	
				100	100	31	19.1	9.26	TNW						
				100	100	86	7.6		TNW	9.68	-5.36	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 5.3.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-143**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,154.37 N 812,087.62	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.01.12		2.30m at 18:00		100 100	100 100	86 74	12.2 9.1	10.05 12.02 12.57		TNW 11.16 TNW 12.57	-7.93	12.57		II	As Sheet 1 of 2. End of drillhole at 12.57m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 31.01.12	DATE 01.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 5.3.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-144**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,151.96 N 812,087.10	W.O. No.
MACHINE / No. DR09		DATE from 02.02.12 to 03.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.02.12	PW	Dry at 08:03								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.13	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
															Wash boring.
	3.35 PW			100					T2116	2.83	+1.80	2.83			Angular to subangular fine GRAVEL and COBBLE sized rock fragments. (FILL)
	HW									3.33	+1.30	3.33			Wash boring.
	6.15 HW							6.06		6.06	-1.43	6.06			Strong ,dark grey,spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely and widely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin and calcite infilling, dipping at 10°-20°, 40°-50°, 60°-70°, 70°-80° and occasional 30°-40° and subvertical joint from 6.34-6.54m.
				100	100	100	3.3		T2101	7.25				II	
		3.15m at 18:00		100	100	89			T2101	8.57					
02.02.12								8.51							
03.02.12		3.28m at 08:00		100	100	38	17.5	8.91	TNW	8.91					
							11.3								
				100	100	76	7.4	9.44	TNW		-5.37	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.02.12

CHECKED EDWARD CHENG DATE 04.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-144**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,151.96 N 812,087.10	DATE from 02.02.12 to 03.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.02.12		3.20m at 18:00		100	100	76	7.4	10.66		TNW 10.28					As Sheet 1 of 2.
				99	99	82	8.8	11.68		TNW 11.68	-7.17	11.80		II	End of drillhole at 11.80m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.02.12

CHECKED EDWARD CHENG DATE 04.02.12

REMARKS

DRILLHOLE LOG - J1105S06 - MTRC 903.GPJ TYSAN_25032006.GDT 14.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-145**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,149.50 N 812,086.78	DATE from 04.02.12 to 06.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
04.02.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.10	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
	3.15 PW HW			88						T2116 3.00	+1.58	3.02			Wash boring. Angular to subangular fine GRAVEL and COBBLE sized rock fragments. (FILL)
	6.54 HW							6.54		3.57	+1.03	3.57			Wash boring.
				100	100	90	4.4			T2101 6.54	-1.94	6.54			Strong , dark grey spotted white and black, slightly decomposed fine ash vitric TUFF. Joints are closely to medium locally very closely and widely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin infilling, dipping at 10°-20°, 50°- 60°, 70°-80° and occasional subvertical joints from 7.32-7.52m, 10.83-11.02m and 11.36-12.12m.
				100	100	73		8.81		7.85				II	
							>20	9.17		T2101 8.29					
				100	100	26	6.1			TNW 9.76					
				98	98	64				TNW	-5.40	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.02.12

CHECKED EDWARD CHENG DATE 07.02.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 14.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-145**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,149.50 N 812,086.78	DATE from 04.02.12 to 06.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
04.02.12		3.26m at 18:00		98	98	64	10.4	10.15 10.82		TNW					As Sheet 1 of 2.
06.02.12		3.55m at 08:00					>20	11.12		11.07				II	
		3.30m at 18:00		100	100	33	5.0 13.8	11.32		TNW					
06.02.12								12.12		12.12	-7.52	12.12			End of drillhole at 12.12m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.02.12

CHECKED EDWARD CHENG DATE 07.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-146**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,147.20 N 812,085.93	W.O. No.
MACHINE / No. DR11		DATE from 31.01.12 to 01.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.10	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
	2.10 PW									1.50					Wash boring.
	HW			57						T2116 2.10	+2.50	2.10			Angular to subangular GRAVEL sized rock and concrete fragments. (FILL)
										2.80	+1.80	2.80			Wash boring.
31.01.12		3.47m at 18:00													
01.02.12		3.50m at 08:00													
	6.80 HW							6.78		6.78	-2.18	6.78			Strong, dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely and widely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin infilling, dipping at 10°-20°, 20°-30°, 50°-60°, 70°-80° and occasional subvertical from 9.35-9.59m, 11.96-12.37m and 12.59-12.81m.
				100	69	69	3.2			T2101				II	
								8.65		8.25					
				100	100	87	9.9			T2101					
								9.66		9.66					
				100	100	86	6.6			T2101	-5.40	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 5.3.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.02.12

CHECKED EDWARD CHENG DATE 02.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-146**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,147.20 N 812,085.93	W.O. No.
MACHINE / No. DR11		DATE from 31.01.12 to 01.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.02.12		4.60m at 18:00		100	100	86	6.6	10.57		T2101					As Sheet 1 of 2.
							15.2	11.23		11.13					
				100	65	57	4.4	12.59		T2101 12.59				II	
				100	72	69	9.2	14.00		T2101 14.00	-9.40	14.00			End of drillhole at 14.00m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.02.12

CHECKED EDWARD CHENG DATE 02.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 5.3.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-147**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,144.72 N 812,085.39	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.01.12	PW	Dry at 08:00								A 0.45 0.50					Soft to firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
										B 0.95 1.00					
										C 1.45 1.50	+3.11	1.50			Wash boring.
	2.30 PW										+2.31	2.30			
	HW			100						T2116					Angular to subangular GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
										3.40	+1.21	3.40			Wash boring.
	6.60 HW						NI	6.60		6.60	-1.99	6.60		IV	Weak, greenish grey spotted white, highly decomposed fine ash TUFF.
				100	88	88	7.8	6.77		T2101	-2.16	6.77			Strong , dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin infilling, dipping at 10°-20°, 30°-40°, 50°-60°, 60°-70° and occasional subvertical joint from 11.30-12.00m and 12.64-12.76m.
							>20	8.05 8.11		8.05					
				100	100	87	5.3	9.25		T2101				II	
							11.9			9.57					
				99	99	97	5.6	9.84		T2101	-5.39	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 6.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-147**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,144.72 N 812,085.39	W.O. No.
MACHINE / No. DR11		DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.01.12		1.63m at 18:00		99	99	97	5.6	11.08		T2101 11.08					As Sheet 1 of 2.
31.01.12		2.05m at 08:00		100	100	77	8.7	12.00		T2101 12.58				II	
							15.5	12.58							
31.01.12		1.59m at 18:00		100	100	87	12.4	13.47		T2101 13.47	-8.86	13.47			End of drillhole at 13.47m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-148**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,142.32 N 812,084.80	DATE from 02.02.12 to 03.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.02.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.12	1.50			Firm, light brown, sandy clayey SILT ,with some fine to coarse gravel sized rock fragments. (FILL)
	1.70 PW									1.50	+2.92	1.70			Wash Boring
	HW			100						T2116 1.70–2.20					Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				100						T2116 2.20–2.70					
				95			14.3	3.33		T2116 2.70–3.33	+1.29	3.33			
					29	21	NI	3.47							Weak to moderately strong, greyish brown and dark grey spotted white and black, highly to moderately decomposed fine ash crystal TUFF. Joints are very closely to closely spaced, smooth planar, narrow, iron and manganese stained, dipping at 10°-20°, 40°-50°, 50°-60°, 70°-80° and occasional subvertical joint from 3.33-3.47m.
				100	92	70	12.2	3.95		T2116 3.95–4.85				IV/III	
				100	89	72	NI	5.34		T2116 4.85–5.80					
								5.80			-1.18	5.80			
	6.88 HW							6.88			-2.26	6.88		V	Wash boring, assumed to be completely decomposed TUFF.
				100	100	59				T2101 6.88–7.56					Strong, dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely and widely spaced, rough planar locally smooth and undulating, narrow to very narrow, iron and manganese stained, locally kaolin and chlorite infilling, dipping at 10°-20°, 20°-30°, 40°-50°, 50°-60° and 70°-80°.
				100	100	85	2.7			T2101 7.56–9.09				II	
		2.86m		100	100	78	9.1	9.78		T2101 9.09–	-5.38	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.02.12

CHECKED EDWARD CHENG DATE 04.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 17.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-148**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,142.32 N 812,084.80	DATE from 02.02.12 to 03.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.02.12		at 18:00		100	100	78				T2101 10.29					As Sheet 1 of 2.
03.02.12		3.84m at 08:00		100	100	94	9.1	11.75		T2101 11.75				II	
		2.90m at 18:00		100	100	86	7.7			T2101 12.79	-8.17	12.79			End of drillhole at 12.79m.
03.02.12								12.79							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.02.12

CHECKED EDWARD CHENG DATE 04.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 17.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-149**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,139.95 N 812,084.36	DATE from 03.02.12 to 04.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.02.12	PW	Dry at 08:00								A 0.45–0.50 B 0.95–1.00 C 1.45–1.50	+3.12	1.50			Soft to firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
											+2.72	1.90			Wash boring.
				100					T2116	1.90–2.40					Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
	2.80 PW														
	HW			86	0	0		3.40	T2116	2.80	+1.22	3.40			
										3.60				IV	Weak to moderately weak, greenish grey spotted white, highly decomposed fine ash vitric TUFF.
				71	5	0	NI		T2101		+0.42	4.20		V	Extremely weak, yellowish brown, completely decomposed fine ash vitric TUFF. (Firm, sandy clayey SILT with some angular to subangular gravel sized rock fragments)
							5.0	4.80 5.00		5.00	-0.38	5.00			Wash boring, assumed to be completely decomposed TUFF.
	6.59 HW													V	
							NI	6.59 6.74		6.59	-1.97 -2.12	6.59 6.74		IV	Strong, dark grey spotted white and black, slightly decomposed fine ash vitric TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, locally kaolin and calcite infilling, dipping at 10°-20°, 50°-60°, 70°-80° and occasional subvertical joint from 10.58-10.90m. 6.59- 6.74m: Highly decomposed TUFF.
		2.57m at 18:00		99	99	93			T2101						
03.02.12							7.4			7.99					
04.02.12		3.89m at 08:00		100	100	69			T2101					II	
							18.6	8.95 9.38		9.28					
				100	100	67	15.1		T2101		-5.38	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.02.12

CHECKED EDWARD CHENG DATE 06.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-149**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,139.95 N 812,084.36	DATE from 03.02.12 to 04.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
04.02.12		2.60m at 18:00		100	100	67	15.1	10.44		T2101 10.44					As Sheet 1 of 2.
				99	99	70	12.2 2.7	11.26 12.01		T2101 12.01	-7.39	12.01		II	End of drillhole at 12.01m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.02.12

CHECKED EDWARD CHENG DATE 06.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-150**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,137.39 N 812,083.78	W.O. No.
MACHINE / No. DR10		DATE from 31.01.12 to 01.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45					Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
											+3.13	1.50			
	2.00	Dry at 18:00								1.50					Wash boring.
31.01.12	PW									2.00	+2.63	2.00			
01.02.12	HW	Dry at 08:00		92						T2116					Angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				93						T2116 3.20 3.50	+1.13	3.50			Wash boring.
	7.16							7.16		7.16	-2.53	7.16			
	HW			100	100	80	5.3			T2101 8.27				II	Strong, dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained and occasional kaolin infilling, dipping at 10°-20°, 20°-30°, 60°-70°, 70°-80° and occasional subvertical joints from 9.60-9.85m and 9.94-10.01m.
				100	100	100		9.05		T2101 9.05					
				100	100	82	13.4			T2101	-5.37	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.02.12

CHECKED EDWARD CHENG DATE 02.02.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-150**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,137.39 N 812,083.78	DATE from 31.01.12 to 01.02.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.02.12		3.30m at 18:00		100	100	82	13.4	10.62		T2101 10.62					As Sheet 1 of 2.
				100	100	91	4.1			T2101				II	
							>20	11.84 12.10		12.10					
				100	100	100	3.0			T2101 12.76	-8.13	12.76			End of drillhole at 12.76m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.02.12

CHECKED EDWARD CHENG DATE 02.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-151**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,134.95 N 812,083.26	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.11	1.50			Firm, reddish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
	2.50 PW									1.50					Wash boring.
	HW			60						T2116 2.50	+2.11	2.50			Angular to subangular fine GRAVEL and COBBLE sized rock fragments. (FILL)
										3.50	+1.11	3.50			Wash boring.
30.01.12	7.21 HW	2.01m at 18:00								7.21	-2.60	7.21			
31.01.12		2.34m at 08:00		100	100	85	6.7	7.21 7.51		T2101 7.21					Strong, dark grey spotted white and black, slightly decomposed fine ash crystal TUFF. Joints are closely to medium locally very closely spaced, rough planar locally smooth, narrow to very narrow, iron and manganese stained, kaolin and occasional chlorite infilling, dipping at 20°-30°, 30°-40°, 50°-60°, 60°-70°, 70°-80° and occasional subvertical joints from 7.63-7.76m and 7.82-7.92m.
							15.7								
				100	100	78	4.2	8.02 8.50		T2101 7.76				II	
										8.72					
				100	100	90	6.6			T2101	-5.39	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-151**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,134.95 N 812,083.26	DATE from 30.01.12 to 31.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.01.12		2.14m at 18:00		100 100 100	100 100 100	95 100 92	13.3 9.4 6.6	10.01 10.31 10.84 13.28		10.01 T2101 11.57 T2101 12.35 T2101 13.28	-8.67	13.28		II	As Sheet 1 of 2. End of drillhole at 13.28m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.01.12

CHECKED EDWARD CHENG DATE 01.02.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-152**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,132.56 N 812,082.69	W.O. No.
MACHINE / No. DR10		DATE from 18.01.12 to 19.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.11	1.50			Stiff to firm, reddish brown to yellowish brown, slightly sandy SILT with some gravel sized rock fragments. (FILL)
											1.50				Wash boring.
	2.80 PW										+1.81	2.80			
	HW			60						T2116					Brownish grey, angular to subangular COBBLE sized rock fragments. (FILL)
											3.80				
											+0.81	3.80			Wash boring.
18.01.12	6.10 HW	2.40m at 18:00						6.10			-1.49	6.10			
19.01.12		2.20m at 08:00		89	0	0	NI			T2101	6.10			IV	Moderately weak, reddish brown, highly decomposed coarse ash TUFF.
								6.54			-1.93	6.54			
				100	100	83	8.2	7.15		T2101	6.54				Strong, dark grey spotted white, slightly decomposed fine to coarse ash crystal TUFF. Joints are medium to closely spaced, rough planar, very narrow, limonite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
							13.8	7.44			7.44				
				100	100	91	5.6	8.68		T2101	8.68			II	
				100	100	80	3.1			TNW	-4.67	9.28			
											-5.39	10.00		II	Strong, dark grey spotted white, slightly decomposed coarse ash crystal TUFF. Joints are widely to closely spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 10°-20° and 80°-90°.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.01.12

CHECKED EDWARD CHENG DATE 20.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-152**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,132.56 N 812,082.69	DATE from 18.01.12 to 19.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								9.97							As Sheet 1 of 2.
				100	100	71	18.8	10.61		TNW 10.10					
				99	84	69	7.1	11.17		TNW 10.61					
							12.3	11.74		TNW 11.74				II	
				100	100	100	5.4	12.30		TNW 12.30					
19.01.12		2.50m at 18:00		100	91	91	2.7	13.04		TNW 13.04	-8.43	13.04			End of drillhole at 13.04m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.01.12

CHECKED EDWARD CHENG DATE 20.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-153**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,130.17 N 812,082.11	W.O. No.
MACHINE / No. DR09		DATE from 11.01.12 to 12.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.48 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.01.12	PW	Dry at 08:00								A 0.45 0.50					Loose, reddish brown, gravelly sandy SILT. (FILL)
										B 0.95 1.00					
										C 1.45	+2.98	1.50			
										1.50	+2.83	1.65			Wash boring.
				100						T2116 1.65					Dark grey to yellowish brown, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
				90						T2116 1.95					
	2.50 PW			86						T2116 2.15					
	HW	1.37m at 18:00		92						T2116 2.50					
11.01.12	3.20 HW									3.10	+1.38	3.10			
12.01.12		2.26m at 08:00													Wash boring.
								4.80		4.80	-0.32	4.80			
				100	100	100	5.0			T2101 5.40					Strong, dark grey spotted white and black, slightly decomposed coarse ash crystal TUFF. Joints are widely to closely spaced, rough planar to undulating, very narrow, limonite locally kaolin stained, dipping at 10°-20° and 80°-90°.
							4.8	5.40							
				99	99	99		6.03		TNW					
										6.86					
				100	100	100	0.8			TNW				II	
										8.32					
							6.3	8.57		TNW					
				99	99	94		9.20							
							5.1								
				100	100	83	4.9	9.79		TNW 9.79	-5.52	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 5.3.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.01.12

CHECKED EDWARD CHENG DATE 13.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-153**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,130.17 N 812,082.11	DATE from 11.01.12 to 12.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.48 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.01.12		1.50m at 18:00		100	100	83	4.9	10.82		TNW 10.82	-6.34	10.82		II	As Sheet 1 of 2. End of drillhole at 10.82m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.01.12

CHECKED EDWARD CHENG DATE 13.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 5.3.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-154**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,127.80 N 812,081.51	W.O. No.
MACHINE / No. DR09		DATE from 10.01.12 to 10.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.44 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.01.12	PW	Dry at 08:00								A 0.45 0.50					Loose, yellowish brown, gravelly SAND. (FILL)
										B 0.95 1.00					
										C 1.45 1.50	+2.94	1.50			Wash boring.
	3.00 PW			100						T2101 2.56	+1.88	2.56			Brown to dark grey, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
	HW			100						2.76					
										T2101 3.42	+1.02	3.42			Wash boring.
	4.10 HW			100	94	94	9.4	3.75		T2101 3.75	+0.69	3.75			Strong, dark grey spotted white and black, slightly decomposed coarse ash crystal TUFF. Joints are medium to widely spaced, rough planar to smooth, limonite and kaolin stained, dipping at 10°-20°, 50°-60° and 80°-90°.
								4.07							
				100	100	100	1.3			TNW					
										5.52					
				100	100	100		6.30		TNW				II	
							3.3			7.00					
				100	100	100		7.52		TNW					
							1.6			8.16					
				100	100	100	3.2	8.16		TNW					
10.01.12		4.02m at 18:00						9.41		9.41	-4.97	9.41			End of drillhole at 9.41m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 10.01.12

CHECKED EDWARD CHENG DATE 11.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-155**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,125.31 N 812,080.89	DATE from 07.01.12 to 09.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.49 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+2.99	1.50			Loose, reddish brown to yellowish brown, gravelly silty SAND. (FILL)
	3.03 HW										+1.46	3.03			Wash boring.
				100				3.36		3.03 T2101 3.36	+1.13	3.36			CONCRETE.
				99	99	99	1.7			T2101 4.22	+1.07	3.42		IV/III	Strong, dark grey spotted white, slightly decomposed coarse ash crystal TUFF. Joints are widely to medium spaced, rough planar, kaolin stained, dipping at 20°-30° and 50°-60°. 3.36- 3.42m: Highly to moderately decomposed TUFF.
07.01.12		0.82m at 18:00		100	100	100		5.10		T2101 5.10					
09.01.12		1.36m at 08:00		99	99	96	1.6			TNW 6.54				II	
				100	100	100	2.6	7.59		TNW 7.97					
							12.5	7.97 8.21							
		0.90m at 18:00		100	100	100	0.0			TNW					
09.01.12								9.40		9.40	-4.91	9.40			End of drillhole at 9.40m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 09.01.12

CHECKED EDWARD CHENG DATE 10.01.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN 25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-156**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,117.06 N 812,079.51	W.O. No.
MACHINE / No. DR10		DATE from 10.01.12 to 10.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.47 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.01.12	PW	Dry at 08:00													Loose, reddish brown to yellowish brown, gravelly coarse SAND. (FILL)
	1.36 PW										+3.47	1.00			Wash boring.
								1.36			+3.11	1.36			Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are medium to widely spaced, smooth planar to rough, limonite and kaolin stained, dipping at 10°-20° and 60°-70°.
				100	100	100	2.6			T2101					
								2.14							
				100	100	100				TNW					
							2.7								
				100	100	100				TNW					
								4.02							
				100	100	100				TNW					
							1.5								
				100	100	100				TNW				II	
								6.66							
				100	100	100				TNW					
							0.9								
				100	100	100		7.76		TNW					
							3.1								
								8.41							
				100	100	100	0.7			TNW					
		2.40m at 18:00													
10.01.12								9.90			-5.43	9.90			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 10.01.12

CHECKED EDWARD CHENG DATE 11.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.00m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-156**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,117.06 N 812,079.51	DATE from 10.01.12 to 10.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.47 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															End of drillhole at 9.90m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 10.01.12

CHECKED EDWARD CHENG DATE 11.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-157**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,168.39 N 812,089.77	DATE from 03.01.12 to 04.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.53 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.01.12	HW	Dry at 08:00								A 0.45 0.50					Loose, yellowish brown, silty fine to coarse SAND with some gravel sized rock fragments. (FILL)
										B 0.95 1.00					
	1.80 HW									C 1.45 1.50	+3.03	1.50			Wash boring.
							NI	1.80 1.94			+2.73 +2.59	1.80 1.94			Dark grey to brownish grey, angular to subangular COBBLE sized rock and concrete fragments. (FILL)
				99	0	0	2.5			T2116					Very strong to strong, dark grey to greenish grey spotted white and black, slightly decomposed fine to coarse ash crystal TUFF. Joints are medium to widely spaced, rough planar to undulating, very narrow, limonite stained, dipping at 10°-20° and 80°-90°.
								2.74			2.74				
				100	100	100				T2101					
											4.12				
		1.25m at 18:00		100	100	100				T2101					
03.01.12							0.0							II	
04.01.12		1.37m at 08:00		100	100	100				T2101	5.35				
											6.35				
				100	100	100				T2101					
								7.46			7.46				
		1.30m at 18:00		100	100	100	1.9			T2101					
04.01.12								8.52			8.52 -3.99	8.52			End of drillhole at 8.52m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.01.12

CHECKED EDWARD CHENG DATE 05.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-158**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,112.31 N 812,079.28	DATE from 11.01.12 to 11.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.59 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.01.12	PW	Dry at 08:00								0.45 0.50 A 0.95 B	+3.59	1.00			Loose, yellowish brown, gravelly coarse SAND. (FILL)
	1.40 PW									1.00	+3.19	1.40			Wash boring.
	1.90 HW			96						T2101 1.40	+2.94	1.65			Dark grey to brown, angular to subangular COBBLE sized rock fragments. (FILL)
								1.95		1.65	+2.64	1.95			Wash boring.
				100	100	100				T2101 1.95					Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are widely spaced, smooth planar, very narrow, limonite and kaolin stained, dipping at 10°-20°.
				100	100	100	1.3			2.49					
								3.53		T2101 3.53					
				100	100	100				TNW 5.05				II	
				100	100	100	1.6			TNW 6.57					
								6.57			-2.14	6.73			
				100	100	100	5.0	7.17		TNW 8.09				II	Strong, dark grey spotted white and black, slightly decomposed coarse ash crystal TUFF. Joints are widely to medium spaced, smooth planar to rough, limonite, chlorite and kaolin stained, dipping at 10°-20°.
				100	100	100	0.4			TNW 9.63	-3.50	8.09		II	Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are widely spaced, smooth planar to undulating, very narrow, limonite, kaolin and chlorite stained, dipping at 10°-20°.
11.01.12		3.95m at 18:00						9.63		9.63	-5.04	9.63			End of drillhole at 9.63m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 11.01.12

CHECKED EDWARD CHENG DATE 12.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.00m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-159**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,110.03 N 812,079.14	DATE from 07.01.12 to 09.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.12	1.50			Firm, reddish brown, gravelly sandy SILT. (FILL)
	2.12 PW										+2.50	2.12			Wash boring.
	NW			100	100	100	2.3	2.12		T2101 2.12					Strong, dark grey to greenish grey spotted white, slightly decomposed fine to coarse crystal TUFF. Joints are medium to widely locally closely spaced, rough planar, chlorite stained, dipping at 10°-20° and 70°-80°.
	3.40 NW							3.40		TNW 3.40					
				100	100	100				4.93					
				100	100	100	1.0			TNW					
				100	100	100				6.47				II	
				100	100	100	5.3	7.44		TNW					
								8.01		8.01					
		2.16m at 18:00		100	100	100	2.0			TNW					
07.01.12								9.53		9.53					
09.01.12		2.20m at 08:00		100	100	100	0.7			TNW	-5.38	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 09.01.12

CHECKED EDWARD CHENG DATE 10.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-159**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,110.03 N 812,079.14	DATE from 07.01.12 to 09.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.62 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
09.01.12		2.50m at 18:00		100	100	100	0.7	10.99		TNW 10.99	-6.37	10.99		II	As Sheet 1 of 2. End of drillhole at 10.99m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 09.01.12

CHECKED EDWARD CHENG DATE 10.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-160**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,107.71 N 812,078.98	W.O. No.
MACHINE / No. DR09		DATE from 05.01.12 to 06.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.01.12	PW	Dry at 08:00								A 0.45–0.50					Loose, reddish brown to yellowish brown, slightly silty gravelly fine to coarse SAND. (FILL)
										B 0.95–1.00					
	1.70	Dry at 18:00								C 1.45–1.50	+3.10	1.50			
05.01.12	PW														Wash boring.
06.01.12	HW	Dry at 08:00						1.93			+2.67	1.93			
	2.27			100	100	100	5.4	2.49		T2101 1.93–2.49					Strong, dark grey spotted white, slightly decomposed fine to coarse ash crystal TUFF. Joints are widely to medium spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20° and 60°-70°.
	HW			100	100	100	1.3	3.27		T2101 2.49–3.27					
				100	100	82	4.3	3.96		T2101 3.27–3.96					
				100	100	100	2.1	4.92		T2101 3.96–4.92				II	
				100	100	100	6.4	5.39		T2101 4.92–5.39					
				100	100	100	1.9	6.99		T2101 5.29–6.43					
				100	100	100				TNW 6.43–6.99	-2.67	7.27			Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are medium to closely spaced, rough planar, limonite and manganese stained, dipping at 10°-20°.
				100	100	100	5.6	9.33		TNW 7.81–9.33				II	
06.01.12		3.50m at 18:00		100	100	100	1.6			TNW	-5.36	9.96			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.01.12

CHECKED EDWARD CHENG DATE 07.01.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-160**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,107.71 N 812,078.98	DATE from 05.01.12 to 06.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								9.96		9.96					End of drillhole at 9.96m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.01.12

CHECKED EDWARD CHENG DATE 07.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-161**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,105.34 N 812,078.56	W.O. No.
MACHINE / No. DR09		DATE from 03.01.12 to 05.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.14	1.50			Loose to medium dense, reddish brown to brown, gravelly silty fine to coarse SAND with occasional gravel sized concrete fragments. (FILL)
											1.50				Wash boring.
03.01.12		0.60m at 18:00													
04.01.12		0.95m at 08:00		92						T2101 2.50	+2.14	2.50			Brownish grey to dark grey, angular to subangular COBBLE sized rock fragments. (FILL)
										3.00	+1.64	3.00			Wash boring.
	3.50 PW										+1.14	3.50			
	HW			98						T2101 3.50					Reddish brown to dark grey, angular to subangular COBBLE and BOULDER rock fragments with slightly clayey sandy silt matrix. (FILL)
	4.44 HW							4.44			+0.20	4.44			
				100	100	100	1.2	5.30		T2101 4.44					Strong, dark grey to greenish grey spotted white, slightly decomposed coarse ash TUFF. Joints are medium to widely locally very widely spaced, very narrow, limonite and kaolin stained, dipping at 10°-20° and 50°-60°.
							4.9	6.11		T2101 5.70					
				100	100	100				T2101 7.25				II	
							0.7								
		0.65m at 18:00		100	100	100				T2101 8.37					
04.01.12															
05.01.12		0.98m at 08:00		100	100	100				T2101 9.06					
								9.06							
		0.70m at		100	93	86	5.8			T2101	-5.36	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.01.12

CHECKED EDWARD CHENG DATE 06.01.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-161**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,105.34 N 812,078.56	DATE from 03.01.12 to 05.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.01.12		18:00						10.08		10.08	-5.45	10.08			As Sheet 1 of 2. End of drillhole at 10.09m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.01.12

CHECKED EDWARD CHENG DATE 06.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-162**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,103.02 N 812,078.40	DATE from 18.01.12 to 19.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.03	1.60			Soft to firm, reddish brown, sandy clayey SILT with some fine to medium gravel sized rock and concrete fragments. (FILL)
				78						T2116 1.60 – 2.50	+2.13	2.50			Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
	3.25 PW HW										+1.38	3.25			Wash boring.
				77						T2116 3.25 – 3.90	+0.73	3.90			Angular to subangular fine GRAVEL and COBBLE sized rock fragments. (FILL)
	6.87 HW						NI	6.87 6.99			-2.17	6.80			Wash boring.
			100	100	100	16.9				6.87 – 8.23 T2101	-2.67	7.30		IV	Moderately weak, grey locally yellowish brown spotted white, highly decomposed fine ash TUFF. Joints are very closely spaced, smooth planar locally rough, narrow, iron stained, kaolin infilling, dipping at 50°-60° and 70°-80 °.
			100	100	100	NI		8.23		8.23 – 9.66 T2101	-4.07 -4.09	8.70 8.72		II	Strong, dark grey spotted black and white, slightly decomposed fine ash TUFF. Joints are widely locally very closely to closely spaced, rough planar, narrow to very narrow, iron and manganese stained, locally calcite and kaolin infilling, dipping at 10°-20°, 20°-30°, 40°-50° and 60°-70°. 8.70- 8.72m: Granite intrusion.
			100	100	100	13.9		9.52 9.88		9.66 – T2101	-5.37	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 19.01.12	DATE 20.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-162**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,103.02 N 812,078.40	DATE from 18.01.12 to 19.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	100	1.4			T2101					As Sheet 1 of 2.
										11.13					
				100	100	97	1.4			T2101				II	
18.01.12		3.17m at 18:00													
19.01.12		3.92m at 08:00						12.66		12.66					
											-8.50	13.13			
											-8.61	13.24			
				100	100	100	6.5			T2101					13.13- 13.24m: Granite intrusion.
19.01.12		3.20m at 18:00						14.19		14.19	-9.56	14.19			
															End of drillhole at 14.19m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 19.01.12	DATE 20.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 6.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-163**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,100.77 N 812,078.11	DATE from 16.01.12 to 17.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.01.12	PW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45 1.50	+3.13	1.50			Firm, greyish brown, sandy clayey SILT with some fine to coarse gravel sized rock fragments. (FILL)
	3.60 PW										+1.03	3.60			Wash boring.
	HW			86						T2116 3.60					Angular to subangular fine GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
										4.30	+0.33	4.30			Wash boring.
	6.80 HW							6.80		6.80	-2.17	6.80			
				98	47	0	NI >20 NI	7.20 7.90 8.23		T2101				V/IV	Extremely weak to very weak, yellowish brown spotted red, completely to highly decomposed fine ash TUFF. (Firm, sandy clayey SILT with some angular to subangular gravel sized rock fragments)
										8.23	-3.60	8.23			
				100	78	55	>20			T2101				IV	Moderately weak, yellowish brown spotted red, highly decomposed fine ash TUFF. Joints are very closely spaced, smooth planar locally rough, narrow, iron stained, kaolin infilling, dipping at 60°-70°, 70°-80° and occasional 10°-20°.
											-4.37	9.00			
16.01.12		2.84m at 18:00						9.53						II	Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are very closely to closely locally medium spaced, rough planar locally smooth, narrow to very narrow, iron stained, chlorite, kaolin and occasional calcite infilling, dipping at 20°-30°.
17.01.12		3.26m		100	100	94	11.9			T2101 9.75	-5.37	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 17.01.12	DATE 18.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 5.3.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-163**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,100.77 N 812,078.11	DATE from 16.01.12 to 17.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
		at 08:00													40°-50°, 50°-60°, 60°-70°, 70°-80° and occasional subvertical joint from 10.58-10.98m.
				100	100	94	11.9			T2101					
								11.30		11.30					
				100	93	90	15.7			T2101					
								12.96		12.78				II	
							>20	13.25							
				100	97	95				T2101					
										14.25					
							4.5								
				100	100	96				T2101					
17.01.12		2.90m at 18:00						15.69		15.69	-11.06	15.69			End of drillhole at 15.69m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test / BHTV
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 17.01.12

CHECKED EDWARD CHENG DATE 18.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 5.3.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-164**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,098.29 N 812,078.04	DATE from 07.01.12 to 09.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.01.12	HW	Dry at 08:00								A 0.45 0.50 B 0.95 1.00 C 1.45	+3.04	1.50			Firm, reddish brown, slightly clayey sandy SILT with some gravel sized rock fragments. (FILL)
										1.50					Wash boring.
				93					T2101	2.30	+2.24	2.30			Grey to yellowish brown, coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				88					T2101	3.50 3.83	+0.71	3.83			Wash boring.
	6.63 HW							6.63		6.63	-2.09	6.63		IV	Moderately weak, yellowish grey, highly decomposed fine ash TUFF. Joints are closely spaced, rough undulating, narrow, manganese and limonite stained, dipping at 10°-20° and 30°-40°.
				75	0	0			T2101		-2.73	7.27			Weak, reddish brown to brown, highly decomposed fine ash TUFF.
				85	0	0	NI		T2101	7.89				IV	
		0.50m at		70	0	0			T2101	8.89	-5.46	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 09.01.12

CHECKED EDWARD CHENG DATE 10.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-164**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,098.29 N 812,078.04	DATE from 07.01.12 to 09.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.01.12		18:00						10.14		T2101 10.14	-5.60	10.14			As Sheet 1 of 2.
09.01.12		0.50m at 08:00		98	91	64	9.3	10.68		T2101 10.72				III/II	Moderately strong to strong, yellowish grey, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar to smooth, narrow, limonite and kaolin stained, dipping at 10°-20°, 70°-80° and 80°-90°.
							>20	10.94							
				96	51	25	15.3	11.53		T2101 11.25					
											-6.99	11.53			
				35	25	0	NR	12.06		TNW 12.06	-7.52	12.06		V	No recovery assumed to be completely decomposed TUFF.
							11.8	12.40							Strong, greenish grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, smooth planar to undulating, calcite, chlorite and kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90°.
							>20	12.60							
				100	58	36	4.9	13.01		TNW					
							12.1	13.34		13.27					
				99	99	93	3.9	15.15		TNW 14.75				II	
				100	100	97	7.5	16.25		TNW					
				100	100	80		16.74		TNW 16.74					
		0.50m at 18:00		100	92	82	5.9	17.25		TNW 17.25	-12.71	17.25			
09.01.12															End of drillhole at 17.25m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 09.01.12

CHECKED EDWARD CHENG DATE 10.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 3.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-165**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,096.06 N 812,077.83	DATE from 05.01.12 to 06.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.19 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.01.12	HW	Dry at 08:00								A 0.45–0.50 B 0.95–1.00 C 1.45–1.50	+2.69	1.50			Firm, reddish brown, slightly clayey sandy SILT with some gravel sized rock fragments. (FILL)
															Wash boring.
				95					T2101	3.00–3.74	+1.19 +0.45	3.00 3.74			Yellowish brown to grey, angular to subangular COBBLE and BOULDER sized rock fragments with some clayey silt matrix. (FILL)
															Wash boring.
05.01.12	7.97 HW	0.50m at 18:00						7.97			-3.78	7.97			
06.01.12		0.50m at 08:00		72	0	0	NI		T2101	7.97–9.24	-5.05	9.24		V/IV	Extremely weak to very weak, reddish brown, completely to highly decomposed coarse ash TUFF. (Stiff to firm, gravelly sandy SILT)
				56	0	0			T2101		-5.81	10.00		IV/III	Moderately weak to moderately strong, reddish grey to brown, highly to moderately decomposed coarse ash TUFF.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.01.12

CHECKED EDWARD CHENG DATE 07.01.12

REMARKS
1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-165**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,096.06 N 812,077.83	W.O. No.
MACHINE / No. DR10		DATE from 05.01.12 to 06.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.19 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.13		T2101 10.13	-5.94	10.13			As Sheet 1 of 2.
				100	79	72	>20	10.47		T2101					Strong, brownish grey to dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough planar, very narrow, limonite, manganese and chlorite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							11.9	10.80		10.80					
								11.06							
				100	97	97				T2101					
							9.0							II	
								12.23							
				100	100	83				T2101					
								12.95		12.95					
				100	87	42				TNW					
							10.1			13.57					
				100	57	57		13.94		TNW					
							9.4			14.10	-9.91	14.10			
				100	74	64		14.47		TNW				III	Moderately strong, greenish grey spotted black and white, moderately decomposed fine to coarse ash crystal TUFF. Joints are closely spaced, rough planar to undulating, very narrow, chlorite and calcite stained, dipping at 10°-20° and 80°-90°.
							5.7	14.82		14.82	-10.63	14.82			
							9.3								Strong, dark grey spotted black and white, slightly decomposed coarse ash crystal TUFF. Joints are closely to very closely spaced, rough planar to smooth, very narrow, kaolin and chlorite stained, dipping at 60°-70° and 80°-90°.
		0.50m at 18:00		100	53	38		15.68		TNW				II	
06.01.12							>20	16.04		16.04	-11.85	16.04			
															End of drillhole at 16.04m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.01.12

CHECKED EDWARD CHENG DATE 07.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-166**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,093.73 N 812,077.54	W.O. No.
MACHINE / No. DR10		DATE from 03.01.12 to 04.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.22 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.01.12	HW	Dry at 08:00								A 0.45 0.50; B 0.95 1.00; C 1.45 1.50	+2.72	1.50			Loose to medium dense, dark brown, gravelly silty fine to coarse SAND. (FILL)
															Wash boring.
03.01.12	9.13 HW	0.50m at 18:00									-4.91	9.13			
04.01.12		0.50m at 08:00		95						9.13 T2101				V/IV	Extremely weak to very weak, grey to reddish brown, completely to highly decomposed coarse ash TUFF. (Angular to subangular coarse GRAVEL and COBBLE sized rock fragments)
				96	79	63	8.0	9.71		9.71 T2101	-5.49	9.71			
											-5.78	10.00		III	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.01.12

CHECKED EDWARD CHENG DATE 05.01.12

REMARKS

1. Inspection pit excavated from 0.00m-1.50m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-166**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,093.73 N 812,077.54	DATE from 03.01.12 to 04.01.12
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.22 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				96	79	63	8.0	10.46		T2101 10.67				III	Moderately strong, yellowish grey to pale grey spotted grey and white, moderately decomposed coarse ash TUFF. Joints are closely to very closely spaced, rough planar to undulating, manganese and limonite stained, kaolin coated (<2mm), dipping at 10°-20°, 40°-50° and 70°-80°.
							>20	10.86							
				97	55	34	13.9	11.22		T2101	-6.94	11.16			
							>20	11.29		11.59					Strong, dark grey spotted black and white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, rough planar to undulating, very narrow, chlorite, limonite and manganese stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							12.3	12.02							
				99	93	54	9.0	12.80		T2101 12.80				II	
				100	100	79	10.0	13.40		TNW					
							12.0	13.90		13.90					
04.01.12		0.50m at 18:00		100	100	90	7.5	14.70		TNW 14.70	-10.48	14.70			
															End of drillhole at 14.70m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.01.12

CHECKED EDWARD CHENG DATE 05.01.12

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 27.1.12

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-001**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,431.15 N 812,150.65	DATE from 03.08.11 to 04.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.53 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.08.11	PW	Dry at 08:00		60						T2116 0.50	+4.03	0.50			Wash boring.
				66						T2116 1.50					Dark grey to brownish grey, GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				78						T2116 2.50					
				60						T2116 3.50					
	6.00 PW / HW									4.80	-0.27	4.80			Wash boring.
											-5.47	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.08.11

CHECKED EDWARD CHENG DATE 05.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.8.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-001**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,431.15 N 812,150.65	DATE from 03.08.11 to 04.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.53 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
								10.82		10.82	-6.29	10.82			
		1.98m at 18:00					NI	11.03			-6.50	11.03	× ×	IV	Moderately weak, dark grey spotted black, highly decomposed MONZONITE.
03.08.11				84	64	64	5.4			T2101			× ×	III	Moderately strong, dark grey spotted black and white, moderately decomposed MONZONITE. Joints are medium to closely spaced, narrow to very narrow, rough undulating, iron and limonite stained, dipping at 10°-20° and 60°-70°.
04.08.11		2.19m at 08:00						11.40		11.40	-6.87	11.40	× ×	V	Wash boring, assumed to be completely decomposed MONZONITE.
	12.89 HW							12.89		12.89	-8.36	12.89			
							NI	13.03			-8.50	13.03	× ×	IV	Moderately weak, dark grey to reddish brown, highly decomposed MONZONITE.
				99	73	36	8.9			T2101			× ×		Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are medium to closely spaced, very narrow, rough planar to undulating, limonite and kaolin stained, dipping at 20°-30°, 40°-50°, 60°-70° and 80°-90°.
								14.26		14.26			× ×		
				100	94	90				T2101			× ×		
							4.1						× ×		
										15.81			× ×		
				100	100	90				T2101			× ×	II	
								16.68					× ×		
										17.35			× ×		
				100	100	100	3.9			T2101			× ×		
										18.81			× ×		
				100	100	100				T2101			× ×		
04.08.11								19.78		19.78	-15.25	19.78	× ×		End of drillhole at 19.78m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.08.11

CHECKED EDWARD CHENG DATE 05.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.8.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-073**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR02	E 835,419.56 N 812,148.32	DATE from 02.07.11 to 08.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.07.11	HW	Dry at 08:00									0.42 +4.13	0.42			Empty casing.
				90						T2101					Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
02.07.11		Dry at 18:00									1.50 +3.05	1.50			
04.07.11		Dry at 08:00									1.80 +2.75	1.80			Wash boring.
				66						T2101					Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
											3.30 +1.25	3.30			Wash boring.
				47						T2101	4.10 +0.45	4.10			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
											5.60 -1.05	5.60			Wash boring.
				33						T2101	5.90 -1.35	5.90			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
	7.18 HW										6.50 -1.95	6.50			Wash boring.
				95	95	80	8.5	7.18		T2101	7.18 -2.63	7.18		IV/III	Moderately weak to moderately strong, light yellowish brown to white, highly to moderately decomposed fine ash TUFF with closely to medium spaced joints.
		3.10m at 18:00		80	74	50				T2101	7.77 -3.85	8.40		IV	
04.07.11							NI	8.40			-4.10	8.65		IV/III	8.40- 8.65m: Highly decomposed TUFF and highly fractured.
05.07.11		6.10m at 08:00		100	42	16	10.0 NI	8.65 8.75		T2101	8.75 -4.20	8.75		IV	8.75- 9.37m: Highly decomposed TUFF and highly fractured.
								9.37			9.37 -4.82	9.37		III/II	Moderately strong to strong, light yellowish brown to light grey, moderately to slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough
				99	83	70	6.3			T2101	-5.45	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 10.07.11

CHECKED EDWARD CHENG DATE 11.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 15.8.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-073**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR02	E 835,419.56 N 812,148.32	DATE from 02.07.11 to 08.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.16							planar, very narrow, iron stained, dipping at 10°-20° and 30°-40°.
				99	83	70	>20	10.40		T2101					
							9.0			10.79				III/II	
		2.90m at 18:00		89	84	84	NI	11.45 11.60		T2101	-6.90 -7.05	11.45 11.60		III	
05.07.11															11.45- 11.60m: Moderately decomposed TUFF.
06.07.11		5.90m at 08:00					4.0			11.92					Strong, light grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, clean, dipping at 10°-20° and 30°-40°.
				97	97	41		12.70		T2101					
							>20	13.10							
							7.5			13.37					
				100	63	38	>20	13.53		T2101					
								13.77		13.77				II	
		2.50m at 18:00		100	100	70				T2101					
06.07.11										14.64					
08.07.11		3.20m at 08:00		100	100	100	2.4			T2101					
										15.47					
				100	100	100				T2101					
08.07.11								16.10		16.10	-11.55	16.10			
															End of drillhole at 16.10m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 10.07.11

CHECKED EDWARD CHENG DATE 11.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 15.8.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-075**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,404.62 N 812,145.99	DATE from 13.07.11 to 18.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.42 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13.07.11	SW	Dry at 08:00													Wash boring.
	1.50 SW			100						T2116 1.20–1.40	+3.22 / +3.02	1.20 / 1.40			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
	PW	2.00m at 18:00													Wash boring.
13.07.11															
14.07.11		2.00m at 08:00		60						T2116 2.00–2.10	+2.42 / +2.32	2.00 / 2.10			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
															Wash boring.
				91						T2101 2.90–3.54	+1.52	2.90			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
		2.15m at 18:00		65						T2101 3.54–4.30					
14.07.11															
15.07.11	4.70 PW	2.20m at 08:00									+0.12	4.30			Wash boring.
	HW	2.17m at 18:00		90						T2101 4.65–4.85	-0.23	4.65			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
15.07.11				100						T2101 5.02–5.09	-0.60 / -0.67	5.02 / 5.09			Wash boring.
16.07.11		2.25m at 08:00		100						T2101 5.09–5.49	-1.07	5.49			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
															Wash boring.
							NI	8.15			-3.73	8.15			Moderately weak to moderately strong, yellowish brown to brown, highly to moderately decomposed corse grained GRANITE with closely to very closely spaced joints.
	8.81 HW			88	77	20	15.0	8.33		T2101 8.15–9.65				IV/III	
							NI	9.40							
				98	98	90	3.6	9.65		T2101 9.65–10.00	-5.23 / -5.58	9.65 / 10.00		II	Strong, light grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.07.11

CHECKED EDWARD CHENG DATE 19.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-075**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,404.62 N 812,145.99	JOB No. J1105S06
MACHINE / No. DR09		DATE from 13.07.11 to 18.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.42 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.07.11		2.95m at 18:00		98	98	90				T2101 10.95					planar, very narrow, iron stained, dipping at 10°-20°, 30°-40° and vertical joint from 8.33-9.20m.
				100	100	100				T2101 12.34					
18.07.11		2.55m at 08:00					3.6							II	
				100	100	100				T2101 13.57					
				97	86	72				T2101	-10.18	14.60			
							NI	14.60 14.75							Moderately strong to strong, light grey to light pink mottled green, moderately to slightly decomposed fine ash TUFF. Joints are closely spaced, rough planar, very narrow, kaolin and chlorite stained, dipping at 10°-20°, 30°-40°. 14.60- 15.77m: Vertical joint with fractured zone 20-30mm along joint face.
18.07.11		2.66m at 18:00		100	100	0	>20	15.77		T2101 15.77	-11.35	15.77		III/II	End of drillhole at 15.77m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.07.11

CHECKED EDWARD CHENG DATE 19.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-075A**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR18	E 835,412.23 N 812,146.73	DATE from 06.09.11 to 08.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.66 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
06.09.11	PW														Wash boring.
	3.00														
06.09.11	PW														
07.09.11	HW														
				94						T2101 4.30 – 4.80	+0.36	4.30			Brownish grey and black, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											-0.14	4.80			Wash boring.
	7.96														
	HW							7.96			-3.30	7.96			
				100	100	100	5.2			T2101 7.96 – 9.03				III/II	Moderately strong to strong, dark grey spotted black and white, fine ash TUFF. Joints are medium to closely locally widely spaced, rough planar, very narrow, limonite and kaolin coated ,dipping at 10°-20°, 40°-50° and 80°-90°.
				99	99	85				T2101 9.03 – 9.90					
								9.90		T2101 9.90	-5.34	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.09.11

CHECKED EDWARD CHENG DATE 09.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-075A**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR18	E 835,412.23 N 812,146.73	DATE from 06.09.11 to 08.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.66 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	100	8.6								As Sheet 1 of 2.
				100	100	100	8.6			T2101					
								10.83		10.83					
							15.2	11.16							
				98	86	81				T2101				III/II	
							4.7			12.13					
								12.65		T2101					
				98	71	60	10.0								
								13.25			-8.59	13.25			
07.09.11							>20	13.48			-8.82	13.48		III	
08.09.11										13.48					13.25- 13.48m: Moderately deocmposed TUFF, highly fractured.
				100	94	69	9.3			T2101				III/II	
08.09.11								14.34		14.34	-9.68	14.34			
															End of drillhole at 14.34m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.09.11

CHECKED EDWARD CHENG DATE 09.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-077**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,394.33 N 812,143.68	JOB No. J1105S06
MACHINE / No. DR09		DATE from 19.07.11 to 20.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.48 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.07.11	HW	Dry at 08:00									+4.48	0.00			Wash boring.
				87						T2101 1.30	+3.18	1.30			Angular, grey and greyish brown, GRAVEL and COBBLE of concrete and rock fragments. (FILL)
										1.60	+2.88	1.60			Wash boring.
				78						T2101 1.80	+2.68	1.80			Angular, pinkish grey and purplish brown, medium to coarse GRAVEL of rock fragments. (FILL)
										2.40	+2.08	2.40			Wash boring.
										2.84	+1.64	2.84			Angular, purplish brown, light and dark grey, COBBLE and BOULDER of moderately and slightly decomposed tuff fragments. (FILL)
				95						T2101 3.44					
				87						T2101 4.04					
		2.15m at 18:00		63						T2101 4.84	-0.36	4.84			
19.07.11															
20.07.11		2.20m at 08:00													Wash boring.
	8.54 HW							8.54		8.54	-4.06	8.54			Angular to subangular, fine to coarse GRAVEL of concrete and rock fragments. (FILL)
							NA	8.84			-4.36	8.84		III	Moderately strong, light grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, extremely to very narrow, limonite and manganese coated, dipping at 10°-20°, 40°-50° and 70°-80°.
				94	73	58	3.7			T2101 9.64	-5.02	9.50		II	
				100	100	79				T2101	-5.52	10.00			Very strong, dark grey streaked white, slightly

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.07.11

CHECKED EDWARD CHENG DATE 21.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-077**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,394.33 N 812,143.68	DATE from 19.07.11 to 20.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.48 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	79				T2101 10.91					decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, extremely narrow, calcite or limonite coated, dipping at 10°-20°, 20°-30°, 40°-50°, 60°-70° and 70°-80°.
				100	100	55				T2101 12.37					
							3.7							II	
				100	100	60				T2101 13.73					
				100	100	100				T2101 14.83					
20.07.11								14.83			-10.35	14.83			End of drillhole at 14.83m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.07.11

CHECKED EDWARD CHENG DATE 21.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-79**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,386.87 N 812,141.46	DATE from 18.07.11 to 19.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.47 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples		Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.07.11	HW	Dry at 08:00														Wash boring.
				100						T2101	1.57	+2.90	1.57			Angular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
				75						T2101	2.47					
				89						T2101	3.27					
	7.21 HW	1.95m at 18:00		100	100	65		7.21		T2101	4.03	+0.44	4.03			Wash boring.
18.07.11										T2101	7.21	-2.74	7.21			Strong, yellowish grey, slightly decomposed fine ash TUFF with closely to medium spaced joints.
19.07.11		2.07m at 08:00					5.0			T2101	7.53				II	
				100	82	82				T2101		-4.13	8.60			
							NI	8.60				-4.33	8.80		IV	Weak, brown, highly decomposed fine ash TUFF. (SILT with some gravel sized rock fragments)
								8.80			9.04					Moderately strong to strong, grey mottled brown, moderately to slightly decomposed fine ash TUFF with medium spaced joints.
				98	89	73	3.0			T2101					III/II	
							>20	9.80				-5.38	9.85			
												-5.53	10.00		III	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.07.11

CHECKED EDWARD CHENG DATE 21.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 26.7.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-79**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,386.87 N 812,141.46	DATE from 18.07.11 to 19.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.47 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.00							9.85- 10.00m: Moderately decomposed TUFF.
				98	89	73				T2101 10.53					Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, iron stained, dipping at 20°-30° and 40°-50°.
				100	100	77				T2101 11.44					
				100	100	100				T2101 12.11				II	
							4.8								
				98	92	81				T2101	-8.79	13.26			
											-9.09	13.56		III	13.26- 13.56m: Yellowish brown and moderately decomposed TUFF.
										13.61					
				100	100	100				T2101				II	
19.07.11		1.99m at 18:00						14.82		14.82	-10.35	14.82			End of drillhole at 14.82m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.07.11

CHECKED EDWARD CHENG DATE 21.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 26.7.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-81**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,375.45 N 812,138.86	DATE from 12.07.11 to 14.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.07.11	HW	Dry at 08:00													Wash boring.
				86						T2101 1.25–1.60	+3.35 / +3.00	1.25 / 1.60			Angular COBBLE sized rock fragments. (FILL)
															Wash boring.
		3.10m at 18:00													
12.07.11															
13.07.11		1.90m at 08:00													
	6.50 HW							6.50			-1.90	6.50			Angular COBBLE sized rock fragments. (FILL)
				73	59	38	NI 6.0	6.85 7.30		T2101 6.50–7.30	-2.25 -2.70	6.85 7.30		IV/III	Moderately weak to moderately strong, yellowish grey locally mottled brown, highly to moderately decomposed fine ash TUFF with closely to medium spaced joints and highly fractured.
				38	25	25	NI 10.0 NI	7.50 7.80 8.30		T2101 7.30–8.22	-2.90 -3.20 -3.70	7.50 7.80 8.30		IV IV/III IV	7.30- 7.50m: Highly decomposed TUFF. 7.80- 8.30m: Highly decomposed TUFF.
				94	58	37	10.0 NI	8.50 8.70		T2101 8.22–8.94	-3.90 -4.10	8.50 8.70		IV/III IV	8.50- 8.70m: Highly decomposed TUFF.
				97	97	81	3.0			T2101 8.94–	-5.40	10.00		II	Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, iron stained, clean, dipping at 10°-20°, 30°-40° and 50°-60°.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.07.11

CHECKED EDWARD CHENG DATE 15.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.7.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-81**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,375.45 N 812,138.86	DATE from 12.07.11 to 14.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				97	97	81	3.0	10.18		T2101 10.18					As Sheet 1 of 2.
				100	100	100				T2101 10.49					
		3.90m at 18:00		98	98	98				T2101 11.63					
13.07.11															
14.07.11		1.70m at 08:00		100	100	100	2.9			T2101 12.74				II	
				98	98	30				T2101 13.71					
				100	100	100				T2101 14.24					
				100	100	100				T2101 15.01					
14.07.11								15.01			-10.41	15.01			End of drillhole at 15.01m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.07.11

CHECKED EDWARD CHENG DATE 15.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.7.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-083**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR10	E 835,362.72 N 812,134.85	DATE from 14.07.11 to 18.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.40 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
14.07.11	HW	Dry at 08:00									+3.40	1.00			Wash boring.
				79	0	0	NI	1.00		T2101 1.00–1.70				IV/III	Moderately weak to moderately strong, yellowish grey, highly to moderately decomposed fine ash TUFF.
	1.96 HW	1.40m at 18:00						1.70			+2.70	1.70			
14.07.11				85	85	85		1.90		T2101 1.90–2.28	+2.50	1.90		V	Wash boring, assumed to be completely decomposed TUFF.
15.07.11		2.10m at 08:00		100	100	74				T2101 2.28–3.64				III/II	Moderately strong to strong, yellowish brown to yellowish grey, moderately to slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow to narrow, iron stained, dipping at 20°-30°, 40°-50° and 75°-80°.
				100	82	82	4.2			T2101 3.64–5.20					
				88	87	87				T2101 5.20–6.67					
				95	95	95		6.80		T2101 6.67–7.62	-2.40	6.80		II	Very strong, dark grey, slightly decomposed fine ash TUFF. Joints are medium to widely spaced, rough planar, very narrow, iron stained, dipping at 20°-30° and 40°-50°.
				100	100	100				T2101 7.62–8.06					
		1.20m at 18:00		100	100	88	3.8			T2101 8.06–9.12	-4.60	9.00			
15.07.11															
16.07.11		0.20m at 08:00		100	100	100				T2101 9.12–9.63				II	Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, slightly kaolin coated, dipping at 20°-30°, 40°-50°, 60°-70° and vertical joint from 10.90-11.50m.
				100	100	100				T2101	-5.60	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.07.11

CHECKED EDWARD CHENG DATE 19.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-083**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR10	E 835,362.72 N 812,134.85	DATE from 14.07.11 to 18.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.40 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
				100	100	100	3.8			T2101 10.40					
				100	100	100		10.90		T2101 10.90					
		0.10m at 18:00		99	90	90				T2101 12.03					
16.07.11 18.07.11		1.80m at 08:00		100	100	100	5.9			T2101 12.63				II	
				100	100	52				T2101 13.79					
				100	100	86				T2101 14.49	-10.09	14.49			
18.07.11								14.49							End of drillhole at 14.49m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.07.11

CHECKED EDWARD CHENG DATE 19.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-084**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,364.25 N 812,136.05	DATE from 23.07.11 to 26.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
23.07.11	PW	Dry at 08:00													Wash boring.
23.07.11		1.32m at 18:00													
25.07.11		1.84m at 08:00													
	3.80 PW			100						3.71 T2116 3.98	+0.68	3.71			Brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL / COLLUVIUM)
				76						T2116	+0.04	4.35		III	Moderately strong, dark grey, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, narrow, kaolin, iron stained and limonite stained, dipping at 10°-20°.
				100	65	65	11.0	4.70		4.70 T2116 4.93	-0.31	4.70			Moderately strong, brownish grey to grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar to undulating, very narrow to narrow, iron oxide, limonite and kaolin stained, dipping at 10°-20°, 20°-30° and 60°-70°.
							>20	5.06 5.13							
							8.2	5.62							
				95	63	63	2.7	5.99		T2101					
							16.7	6.53		6.45				III	
							3.7	7.35							
				100	89	80	7.3	7.90		T2101					
							14.0	8.32		7.90					
				100	57	22	16.3	8.81		T2101	-4.06	8.45			Moderately strong to strong, dark grey spotted and streaked white, fine ash TUFF. Joints are closely to medium locally very closely to closely spaced, rough smooth to planar undulating, kaolin, limonite, chlorite and calcite stained, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
				94	71	42	5.1			8.81 T2101 9.53				III/II	
				99	96	96				T2101	-5.61	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.07.11

CHECKED EDWARD CHENG DATE 29.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-084**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,364.25 N 812,136.05	DATE from 23.07.11 to 26.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.07.11		2.08m at 18:00		99	96	96	5.1			T2101 10.22					As Sheet 1 of 2.
				100	100	85				T2101 11.00					
				100	96	84				T2101 11.68					
26.07.11		2.27m at 08:00		100	100	100				T2101 12.14					
				100	0	0	14.0	12.14 12.64		T2101 12.64				III/II	
				100	0	0	>20			T2101 13.24					
				100	0	0		13.42 13.42		T2101 13.59					
				100	0	0				T2101 13.92					
				97	27	27	10.9			T2101					
26.07.11								14.80		14.80	-10.41	14.80			End of drillhole at 14.80m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.07.11

CHECKED EDWARD CHENG DATE 29.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-84A**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,353.35 N 812,132.19	DATE from 15.07.11 to 16.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.44 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.07.11	HW														Wash boring.
								4.54		4.54	-0.10	4.54		IV/III	Moderately weak to moderately strong, yellowish brown to yellowish grey, highly to moderately decomposed fine ash TUFF.
				97	76	38	NI	4.94		T2101	-0.50	4.94			Moderately strong to strong, grey, moderately to slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, iron stained, dipping at 20°-30°, 50°-60° and vertical joint from 4.94-5.40m.
				100	100	70	5.4	5.98		T2101				III/II	
	7.41 HW							7.41		7.41	-2.97	7.41			Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, very narrow, iron stained and slightly kaolin coated, dipping at 10°-20°, 30°-40°, 50°-60° and subvertical joint from 11.10-12.10m.
				100	100	74	4.0	8.09		T2101					
				100	63	50	>20	8.49		T2101				II	
							0.0	8.88		8.88					
				100	100	60	>20	9.10		T2101					
15.07.11							3.3	9.30							
16.07.11				100	86	72		9.71		T2101	-5.56	10.00			
								9.90							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.07.11

CHECKED EDWARD CHENG DATE 19.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.7.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-84A**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,353.35 N 812,132.19	DATE from 15.07.11 to 16.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.44 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.05							As Sheet 1 of 2.
				100	86	72	>20			T2101					
										10.40					
				100	92	30	10.0			T2101					
								11.57		11.57					
				100	100	0	>20			T2101				II	
								12.10		12.10					
				100	90	40	13.1			T2101					
										13.11					
				100	100	30				T2101					
16.07.11								13.72		13.72	-9.28	13.72			
															End of drillhole at 13.72m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.07.11

CHECKED EDWARD CHENG DATE 19.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 20.7.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-102**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR12	E 835,453.16 N 812,154.99	DATE from 01.08.11 to 02.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.08.11	PW	Dry at 08:00		100						T2116 0.00–0.50	+4.24	0.50			Angular COBBLE and BOULDER sized rock fragments. (FILL)
											+3.94	0.80			Wash boring.
		Dry at 18:00		76						T2116 0.80–1.30					Angular COBBLE and BOULDER sized rock fragments. (FILL)
01.08.11															
02.08.11		Dry at 08:00		83						T2116 1.30–1.90					
											+2.84	1.90			Wash boring.
											+2.44	2.30			
				83						T2116 2.30–2.90					Angular COBBLE and BOULDER sized rock fragments. (FILL)
											+1.84	2.90			Wash boring.
	3.45 PW HW										+1.29	3.45			
				100						T2116 3.45–3.80					Angular COBBLE and BOULDER sized rock fragments. (FILL)
				83						T2116 3.80–4.40					
				100						T2116 4.40–5.10	-0.36	5.10			Wash boring.
											-5.26	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.08.11

CHECKED EDWARD CHENG DATE 04.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 9.8.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-102**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR12	E 835,453.16 N 812,154.99	DATE from 01.08.11 to 02.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
	11.68 HW							11.68		11.68	-6.94	11.68			
				100	96	96	3.2	12.94		T2101 13.07					Moderately strong to strong, greenish grey spotted white and pink, slightly decomposed coarse MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 20°-30°, 40°-50°, 60°-70° and 80°-90°.
				100	80	59	12.1	13.93		T2101 14.57					
							3.5	14.51							
				100	76	54	>20	14.77		T2101 15.93				III/II	
							12.1	15.68							
				100	63	58	3.3	16.58		T2101 16.93					
							14.0	17.08							
02.08.11		2.55m at 18:00		100	95	78	5.4	18.00		T2101 18.00	-13.26	18.00			
															End of drillhole at 18.00m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.08.11

CHECKED EDWARD CHENG DATE 04.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 9.8.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-103**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,443.27 N 812,153.08	DATE from 01.08.11 to 02.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.08.11	PW	Dry at 08:00		100						T2116 0.00–0.50	+4.14	0.50			Grey and greyish brown, angular to subangular GRAVEL and COBBLE of concrete and rock fragments. (FILL)
															Wash boring.
										T2116 0.50–1.70	+2.94	1.70			Grey and greyish brown, angular to subangular GRAVEL and COBBLE of concrete and rock fragments. (FILL)
				100						T2116 1.70–3.00					
				100						T2116 3.00–4.20	+0.44	4.20			
															Wash boring.
	6.00 PW / HW														
				43	0	0	NI	7.40		T2101 7.40–8.00	-2.76	7.40	× × × × × ×	IV/III	Weak to moderately weak, greyish brown, highly to moderately decomposed MONZONITE. Non intact.
								8.00			-3.36	8.00		V	Wash boring, assumed to be completely decomposed MONZONITE.
											-5.36	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.08.11

CHECKED EDWARD CHENG DATE 04.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 19.8.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-103**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,443.27 N 812,153.08	DATE from 01.08.11 to 02.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +4.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
01.08.11		3.27m at 18:00												V	
02.08.11	12.45 HW	2.50m at 08:00													
							NI	12.45		12.45	-7.81	12.45		IV/III	Weak to moderately weak, greyish brown, highly to moderately decomposed MONZONITE. Non intact.
								12.64			-8.00	12.64			
				100	81	50	16.4			T2101				III	Moderately strong, greyish pink and greyish brown spotted black and white, moderately decomposed MONZONITE. Joints are very closely to closely spaced, rough planar, extremely narrow, limonite and chlorite coated, dipping at 0°-10°, 10°-20° and subvertical.
								13.25			-8.61	13.25			
				100	100	98				13.41 T2101					Strong, greyish pink spotted black and white, slightly decomposed MONZONITE. Joints are closely to medium locally very closely spaced, rough planar, extremely narrow, chlorite coated, clean, dipping at 10°-20° and 20-30°.
				100	100	95	2.8			14.37 T2101					
								15.40		15.10 T2101					
				100	100	76								II	
				100	100	67	5.6			16.56 T2101					
										18.06 T2101					
				100	100	85									
02.08.11								19.51		19.51	-14.87	19.51			End of drillhole at 19.51m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.08.11

CHECKED EDWARD CHENG DATE 04.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 19.8.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-110**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,334.36 N 812,148.17	DATE from 10.09.11 to 12.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.14 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.09.11	HW										+0.54	0.60			Wash boring.
				44						T2101					Brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments with some clayey silt matrix. (FILL)
										0.60	-0.81	1.95			
										1.95					Wash boring.
	4.19 HW										-3.05	4.19			
				100	56	56	6.0	4.19		4.19 T2101					Moderately strong, dark grey to brownish grey, moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, very narrow to narrow, kaolin, limonite, manganese and occasional chlorite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
							5.9	4.69		4.69 T2101					
				98	70	48		5.03							
							11.9	5.62		5.62 T2101					
				100	100	100									
							4.1			6.37 T2101					
				100	78	57		6.85		7.28 T2101				III	
							10.9	7.49							
				100	0	0	>20	7.80		7.91 T2101					
							3.7								
				100	40	40		8.61		T2101					
							12.9	9.31		9.31 T2101					
10.09.11				100	0	0	7.8								
12.09.11				100	0	0	8.3	9.82		9.82 T2101	-8.86	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.09.11

CHECKED EDWARD CHENG DATE 14.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 15.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-110**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,334.36 N 812,148.17	DATE from 10.09.11 to 12.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.14 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.09.11				100	0	0	8.3	10.54		T2101 10.54	-9.40	10.54		III	As Sheet 1 of 2. End of drillhole at 10.54m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.09.11

CHECKED EDWARD CHENG DATE 14.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 15.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-111**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,324.53 N 812,145.93	DATE from 14.09.11 to 15.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
14.09.11	HW										+0.53	0.60			Wash boring.
				46						0.60 T2101 1.90	-0.77	1.90			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	3.53 HW										-2.40	3.53			Wash boring.
				100	77	77	5.7	3.53		3.53 T2101 3.79				III	Moderately strong, dark grey spotted black and white, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow to moderately narrow, manganese, kaolin and limonite stained, dipping at 10°-20° and 80°-90°.
				90	30	30	NI	4.23		T2101 4.50	-3.10	4.23		IV/III	
				98	73	63	5.7	4.50		T2101 5.63	-3.37	4.50			Moderately weak to moderately strong, brownish grey, highly to moderately decomposed fine ash TUFF.
							15.4	5.37							Moderately strong, dark grey locally brownish grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, narrow to very narrow, manganese, chlorite and limonite stained, dipping at 50°-60°, 60°-70° and 80°-90°.
				100	41	41	7.1	5.63		T2101 6.62				III	
				100	66	66	>20	6.62							
							3.1	6.70		T2101 7.53					
14.09.11							>20	7.35							
15.09.11				100	87	87	11.1	7.53		T2101 8.71	-7.58	8.71			
							2.7	7.98							
				100	84	75	7.4	8.71		T2101 9.63	-8.87	10.00		II	Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely spaced, smooth planar, very narrow, kaolin and chlorite stained, dipping at 10°-20° and 80°-90°.
							13.2	9.25							
				100	55	55	4.9	9.63		T2101					

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.09.11

CHECKED EDWARD CHENG DATE 16.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-111**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,324.53 N 812,145.93	DATE from 14.09.11 to 15.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.09.11				100	55	55	4.9	11.06		T2101 11.06	-9.93	11.06		II	As Sheet 1 of 2. End of drillhole at 11.06m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.09.11

CHECKED EDWARD CHENG DATE 16.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-112**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,326.27 N 812,138.59	DATE from 05.09.11 to 06.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.09.11	HW	Dry at 08:00									+0.50	0.67			Wash boring.
				88	88	0	>20	0.67		T2101 0.67–1.12	+0.05	1.12		III	Moderately strong, grey, moderately decomposed fine ash TUFF. (CORESTONE)
								1.12			-0.09	1.26		V	Wash boring, assumed to be completely decomposed TUFF.
				98	98	28	10.2	1.26		T2101 1.26–2.73				II	Strong, light grey to grey, slightly decomposed fine ash TUFF with closely spaced joints.
				100	38	30	NI	3.00		T2101 2.73–3.70	-1.83	3.00		IV	Weak, light grey to grey, highly decomposed fine ash TUFF. (Sandy SILT with some gravel sized rock fragments)
	3.70 HW							3.70			-2.53	3.70			
				100	100	80				T2101 3.70–4.53				II	Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, iron stained, dipping at 10°-20°, 30°-40° and 50°-60°.
				100	100	100	3.0			T2101 4.53–5.74					
		Dry at 18:00		93	93	93				T2101 5.74–6.18					
05.09.11															
06.09.11		4.35m at 08:00		100	100	100				T2101 6.18–6.73				II	
								6.73							
				100	100	83				T2101 6.73–8.17					
				100	100	100	3.1			T2101 8.17–8.65					
				100	100	85				T2101 8.65–9.78	-8.13	9.30		III	9.30- 9.78m: Moderately decomposed TUFF.
				100	100	100				T2101 9.78–	-8.61	9.78		II	
											-8.83	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.09.11

CHECKED EDWARD CHENG DATE 07.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 19.10.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-112**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,326.27 N 812,138.59	DATE from 05.09.11 to 06.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
06.09.11				100	100	100	3.1	10.40		T2101 10.40	-9.23	10.40		II	As Sheet 1 of 2.
															End of drillhole at 10.40m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.09.11

CHECKED EDWARD CHENG DATE 07.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 19.10.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-113**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,313.71 N 812,143.28	DATE from 16.09.11 to 16.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.09.11	HW										+0.63	0.50			Wash boring.
				68						0.50 T2101 1.44					Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
								1.44			-0.31	1.44			
	2.04 HW			92	0	0	NI	2.04		1.44 T2101 2.04	-0.91	2.04		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately deocmposed fine ash TUFF.
							14.8	2.31			-1.41	2.54		III	Moderately strong, brownish grey spotted grey, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow, manganese, limonite and kaolin stained, dipping at 10°-20° and 80°-90°.
				100	82	77				2.04 T2101 3.54					
				100	100	100	6.3			3.54 T2101 4.44				III/II	Moderately strong to strong, dark grey locally brownish grey spotted white, moderately decomposed fine ash crystal TUFF. Joints are medium locally closely spaced, rough planar, very narrow, limonite and kaolin stained, dipping at 30°-40°, 50°-60° and 80°-90°.
				99	42	42		5.02		4.44 T2101 5.50					
							10.3	5.70			-4.37	5.50			
				100	67	67	11.1	6.15		5.50 T2101 6.58					Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are medium to widely spaced, rough planar, chlorite and kaolin locally limonite stained, dipping at 40°-50° and 80°-90°.
							4.7	6.58							
				100	65	65				6.58 T2101 7.13					
				100	92	78	8.4			7.13 T2101 7.89				II	
				100	100	100	4.6	7.89		7.89 T2101 8.76					
16.09.11								8.76			-7.63	8.76			
															End of drillhole at 8.76m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.09.11

CHECKED EDWARD CHENG DATE 17.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-114**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,315.49 N 812,136.01	DATE from 02.09.11 to 03.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.09.11	HW	Dry at 08:00								0.30	+0.85	0.30			Wash boring.
				60						T2101					Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
										0.80	+0.35	0.80			Wash boring.
	1.52 HW							1.52		1.52	-0.37	1.52			
				75	0	0	NI	1.72		T2101	-0.57	1.72		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed fine ash TUFF.
				100	100	76				T2101					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar and undulating, very narrow, kaolin, limonite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
				99	99	85	6.4			2.74 T2101					
				100	67	67				3.98 T2101					
				100	65	65		5.30		4.76 T2101				II	
							18.4	5.68		5.68					
				100	100	82				T2101					
							4.7			6.41					
		3.20m at 18:00		100	100	100				T2101					
02.09.11								7.39		7.39					
03.09.11		3.50m at 08:00		99	99	97	6.8			T2101					
03.09.11								8.27		8.27	-7.12	8.27			End of drillhole at 8.27m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.09.11

CHECKED EDWARD CHENG DATE 05.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 19.10.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-115**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,303.11 N 812,140.80	DATE from 17.09.11 to 19.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.08 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
17.09.11	HW	0.00m at 08:00									+0.58	0.50			Wash boring.
				41						T2101 0.50–1.30					Dark grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											-0.22	1.30			Wash boring.
	3.50 HW										-2.42	3.50			
				70	0	0	NI	3.50		T2101 3.50–3.87	-2.79	3.87		III	Moderately weak, brownish grey, highly decomposed fine ash TUFF.
				100	93	85	5.2	3.87		T2101 3.87–5.35	-4.27	5.35		IV	Moderately strong, dark grey to brownish grey moderately decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar, very narrow to narrow, limonite, kaolin and manganese stained, dipping at 10°-20°, 30°-40° and 80°-90°.
		0.00m at 18:00		100	61	61	18.2	6.00		T2101 5.35–6.86					Strong, dark grey spotted grey and white, slightly decomposed fine ash TUFF. Joints are medium to very closely spaced, rough planar, very narrow, limonite and kaolin stained, dipping at 20°-30°, 40°-50° and 80°-90°.
17.09.11 19.09.11		0.00m at 08:00		100	100	100	3.3	6.33		T2101 6.86–7.31					
				100	100	100				T2101 7.31–8.17				II	
				100	44	44	9.6 8.9	8.17 8.69		T2101 8.17–9.25					
		0.00m at 18:00		100	67	67	8.3	9.25 9.85		T2101 9.25–9.85	-8.77	9.85			
19.09.11															End of drillhole at 9.85m

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.09.11

CHECKED EDWARD CHENG DATE 20.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-116**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,304.92 N 812,133.49	DATE from 31.08.11 to 01.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.08.11	0.48 HW	0.00m at 08:00		69				0.48		T2101 0.35	+0.78	0.35			Wash boring.
										T2101 0.48	+0.65	0.48			Dark grey to black, angular to subangular coarse GRAVEL sized rock fragments. (FILL)
				98	98	98	8.9	1.04		T2101 1.04					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar, very narrow to narrow, limonite, chlorite locally kaolin stained, dipping at 10°-20°, 50°-60° and 80°-90°.
				100	100	95	4.0			T2101 2.30				II	
				100	100	91				T2101 3.00					
				99	93	78	>20	3.54 3.69		T2101	-2.41 -2.56	3.54 3.69		III	3.54- 3.69m: Moderately decomposed TUFF.
							2.6	4.08							
				100	77	70	13.5	4.82		T2101 4.36					
							4.8			T2101 5.27				II	
				100	87	80	7.6	5.65		T2101					
		0.00m at 18:00		100	100	100		6.31		T2101 6.31					
31.08.11							3.1			T2101 6.71					
01.09.11		0.00m at 08:00		100	100	100				T2101					
01.09.11		0.00m at 18:00						7.27		7.27	-6.14	7.27			End of drillhole at 7.27m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.09.11

CHECKED EDWARD CHENG DATE 02.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-117**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,293.08 N 812,140.52	DATE from 20.09.11 to 21.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.09.11	HW	0.00m at 08:00									+0.43	0.60			Wash boring.
				71						0.60 T2101 1.30	-0.27	1.30			Dark grey and reddish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments with some sandy silt. [FILL]
	3.41 HW										-2.38	3.41			Wash boring.
				61	0	0	NI	3.41		3.41 T2101 4.03	-3.22	4.25		IV	Moderately weak, yellowish grey to pale grey, highly decomposed fine ash TUFF.
				100	53	53	11.1	4.25		T2101	-3.58	4.61		III	4.25- 4.61m: Moderately decomposed TUFF.
							NI	4.61		4.71				IV	
				95	25	25	13.6	5.03		T2101	-4.00	5.03		III	5.03- 5.25m: Moderately decomposed TUFF.
							NI	5.47			-4.22	5.25		IV	
								6.01		6.01	-4.98	6.01			Strong, dark grey spotted white, slightly decomposed fine ash TUFF, Joints are medium to closely spaced, rough planar, very narrow, chlorite, kaolin and limonite stained, dipping at 10°-20°, 30°-40°, 50°-60° and 80°-90°.
20.09.11		0.00m at 18:00		100	100	100	3.6			T2101 6.82					
21.09.11		0.00m at 08:00		100	100	100				T2101 7.40					
				100	100	100	2.7	7.66		T2101 8.33				II	
				99	70	70	12.9	8.79		T2101 9.49					
				100	100	100	3.1	9.49		T2101	-8.97	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.09.11

CHECKED EDWARD CHENG DATE 22.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-117**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,293.08 N 812,140.52	DATE from 20.09.11 to 21.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.14							As Sheet 1 of 2.
				100	100	100				T2101					
										10.57					
							6.7								
				100	100	97				T2101				II	
								11.48		11.48					
		0.00m at 18:00		100	100	100	4.1			T2101					
21.09.11								12.21		12.21	-11.18	12.21			
															End of drillhole at 12.21m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.09.11

CHECKED EDWARD CHENG DATE 22.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-118**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,295.33 N 812,131.22	DATE from 29.08.11 to 30.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.12 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
29.08.11	HW	Dry at 08:00		60						T2101 0.30–0.60	+0.82	0.30			Wash boring.
											+0.52	0.60			Black to dark grey, angular to subangular coarse GRAVEL sized rock fragments. (FILL)
	1.70 HW														Wash boring.
				100	88	54	15.9	1.70		T2101 1.70–2.26	-0.58	1.70		III	Moderately strong, pale grey to brownish grey, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, very narrow, clean, dipping at 10°-20° and 30°-40°.
				100	98	98	3.0	2.39		T2101 2.26–3.32	-0.78	1.90			Strong, dark grey spotted black and white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar, very narrow, clean, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
				100	100	74		3.74		T2101 3.32–4.33					
		2.20m at 18:00		99	99	89	6.9			T2101 4.33–5.13					
29.08.11															
30.08.11		2.30m at 08:00		100	97	73	8.7	5.47		T2101 5.13–6.55				II	
				100	89	55	17.9	6.96		T2101 6.55–7.84					
				100	100	90	7.9	7.52		T2101 7.84–8.53					
30.08.11								8.53		8.53	-7.41	8.53			End of drillhole at 8.53m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.09.11

CHECKED EDWARD CHENG DATE 02.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 19.10.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-119**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,284.03 N 812,138.38	JOB No. J1105S06
MACHINE / No. DR06		DATE from 22.09.11 to 23.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.01 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.09.11	HW	0.00m at 08:00									+0.51	0.50			Wash boring.
				50						0.50 T2101 1.00					Dark grey and reddish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments with sandy silt. (FILL)
				74						T2101 1.50	-0.49	1.50			
	2.69 HW														Wash boring.
				89	0	0				2.69 T2101	-1.68	2.69		IV/III	Moderately weak to moderately strong, dark grey, highly to moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, narrow to moderately narrow, kaolin, limonite and manganese stained, dipping at 20°-30° and 80°-90°.
				100	100	89	5.4	3.51		3.51 T2101	-2.50	3.51			
				100	46	38	13.6	4.81		4.21 T2101					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, very narrow, limonite and kaolin stained, dipping at 20°-30°, 40°-50° and 80°-90°.
		0.00m at 18:00		100	41	41	2.9	5.40		5.40 T2101					
22.09.11							12.5	5.74							
23.09.11		0.00m at 08:00						6.22		6.22					
				100	70	64	5.9	7.23		T2101 7.43				II	
				100	98	98	12.2	7.64		T2101 8.61					
							4.1	8.61							
		0.00m at 18:00		100	100	100	3.7	9.95		T2101 9.95	-8.94	9.95			
23.09.11															

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.09.11

CHECKED EDWARD CHENG DATE 24.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-119**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,284.03 N 812,138.38	JOB No. J1105S06
MACHINE / No. DR06		DATE from 22.09.11 to 23.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.01 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															End of drillhole at 9.95m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.09.11

CHECKED EDWARD CHENG DATE 24.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-120**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,286.27 N 812,129.02	DATE from 26.08.11 to 27.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.08.11	HW 0.52 HW	0.00m at 08:00													Wash boring.
				100	0	0	NI	0.52 0.69		T2101 0.52 0.69	+0.61 +0.44	0.52 0.69		IV/III	Moderately weak to moderately strong, brownish grey to dark grey, highly to moderately decomposed fine ash TUFF.
				100	97	88	10.3			T2101 1.62					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite, chlorite and kaolin stained, dipping at 10°-20°, 20°-30°, 50°-60° and 80°-90°.
				100	91	82				T2101 2.54					
				100	100	100	4.3	2.54 3.23		T2101 3.09					
				100	73	55	13.8	4.17		T2101 4.37				II	
				100	100	91	5.0	5.37		T2101 5.37					
		0.00m at 18:00		98	84	77	7.4			T2101 6.44					
26.08.11 27.08.11		0.00m at 08:00		100	95	95				T2101 6.99	-5.86	6.99			
27.08.11		18:00						6.99							End of drillhole at 6.99m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 27.08.11

CHECKED EDWARD CHENG DATE 29.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-121**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,275.02 N 812,136.24	DATE from 24.09.11 to 26.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.00 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.09.11	HW	0.00m at 08:00									+0.60	0.40			Wash boring.
	0.80 HW			75				0.80		T2101 0.40–0.80	+0.20	0.80			Dark grey to grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				100	74	54	10.5	1.37		T2101					Moderately strong, dark grey to brownish grey spotted black and white, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, narrow locally moderately narrow, kaolin and limonite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
				98	89	67	4.8	2.62		T2101 1.72–2.62				III	
				100	47	14	19.4	2.93		T2101					
							11.7	3.70		T2101 3.38	-2.70	3.70			
				100	71	60	2.9	4.04		T2101					Strong, dark grey spotted and streaked white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, smooth planar, very narrow, kaolin and chlorite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
							12.0	4.87		T2101 4.87					
24.09.11		0.00m at 18:00		100	100	100	5.8	5.56		T2101 5.56				II	
26.09.11		0.00m at 08:00					6.2	6.04							
				98	65	65	16.7	6.28		T2101					
							5.5	6.83		T2101 6.83					
26.09.11		0.00m at 18:00		100	20	20	10.2	7.32		7.32	-6.32	7.32			End of drillhole at 7.32m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.09.11

CHECKED EDWARD CHENG DATE 27.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-122**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,277.32 N 812,126.74	DATE from 24.08.11 to 25.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.14 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.08.11	0.44 HW	0.00m at 08:00						0.44			+0.70	0.44			Wash boring.
				95	0	0	NI	0.64		T2101 0.44	+0.50	0.64		IV/III	Moderately weak to moderately strong, brownish grey to grey, highly to moderately decomposed fine ash TUFF.
				100	67	60	13.4			T2101 0.64					Moderately strong to strong, dark grey spotted white, moderately to slightly decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, smooth planar, very narrow, kaolin, limonite, chlorite and manganese stained, dipping at 10°-20°, 30°-40°, 50°-60° and 80°-90°.
				96	90	90	3.4	1.31		T2101 1.31					
				100	100	79		2.20		T2101 2.20					
				100	100	93	8.0			T2101 2.62					
								3.83		3.67					
							17.2	4.12							
				99	76	76				T2101 4.99				III/II	
				100	94	94	6.3			T2101 5.65					
				100	94	87				T2101 6.69					
							>20	6.64 6.78							
24.08.11		0.00m at 18:00		100	100	86	3.6			T2101 7.34					
25.08.11		0.00m at 08:00		100	78	67	10.0	7.34							
25.08.11		0.00m at 18:00					>20	7.74 7.94		T2101 7.94	-6.80	7.94			
															End of drillhole at 7.94m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.08.11

CHECKED EDWARD CHENG DATE 26.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-123**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,264.35 N 812,133.74	DATE from 27.09.11 to 28.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.97 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
27.09.11	HW	0.00m at 08:00									+0.47	0.50			Wash boring.
				47						T2101 0.50					Yellowish grey to grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	1.25 HW							1.25		T2101 1.25	-0.28	1.25			Strong, dark grey locally brownish grey, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar, very narrow, manganese, limonite and chlorite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
				100	93	93	2.8			T2101 2.13					
				100	76	76	18.2	2.70		T2101 2.88					
				100	95	95	5.1	2.92		T2101 3.73					
				100	86	86	>20	4.10 4.20		T2101 4.45				II	
				96	96	96	3.8			T2101 5.28					
		0.00m at 18:00		100	100	100				T2101 5.68					
27.09.11															
28.09.11		0.00m at 08:00		100	86	86				T2101 6.05					
				100	100	91	6.0	6.05		T2101 6.72					
							8.9	6.72		T2101 7.17					
		0.00m at 18:00		100	91	84	5.5	7.17		T2101 7.72	-6.75	7.72			End of drillhole at 7.72m.
28.09.11								7.72							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.09.11

CHECKED EDWARD CHENG DATE 29.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-124**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,266.56 N 812,124.30	DATE from 22.08.11 to 23.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.10 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.08.11	0.27 HW	Dry at 08:00						0.27		T2101 0.27	+0.83	0.27			Wash boring.
				77	0	0				0.40	+0.70	0.40		IV/III	Moderately weak to moderately strong, grey to yellowish grey, highly to moderately decomposed fine ash TUFF.
				100	0	0	>20	0.67		T2101 0.67					
				100	66	66	8.2	1.16		T2101					Moderately strong to strong, yellowish grey to dark grey spotted white, moderately to slightly decomposed fine ash TUFF. Joints are closely to very closely locally medium spaced, rough planar, very narrow, limonite, manganese locally kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90°.
							>20	1.26							
							8.3	1.50							
							>20	1.63		1.44					
				100	84	46				T2101					
										2.34					
				97	91	61	9.3			T2101				III/II	
										3.51					
				92	74	64		3.79		T2101 3.90					
							19.6								
				99	77	48		4.30		T2101					
							8.0								
							>20	5.05 5.23		5.05					
				100	82	64	9.6			T2101	-4.46	5.56			Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite, kaolin locally manganese stained, dipping at 10°-20°, 20°-30°, 50°-60° and 80°-90°.
								6.17		6.17					
				98	94	89				T2101					
							5.5			7.06				II	
		Dry at 18:00		100	88	88				T2101					
22.08.11										7.63					
23.08.11		Dry at 08:00		100	100	100	7.6			T2101					
23.08.11								8.29		8.29	-7.19	8.29			End of drillhole at 8.29m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.08.11

CHECKED EDWARD CHENG DATE 24.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 1.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-125**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR05	E 835,251.64 N 812,128.58	DATE from 11.10.11 to 12.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.96 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.10.11	HW	0.00m at 08:00													Wash boring.
				85						T2101	+0.16	0.80			Grey, angular to subangular COBBLE sized rock fragments. (FILL)
										0.80	-0.04	1.00			Wash boring.
	1.78 HW									1.00					
								1.78		1.78	-0.82	1.78			Strong, dark grey spotted and streaked white,slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, limonite and chlorite stained, dipping 10°-20°, 40°-50° and 80°-90°.
				100	75	70	5.1	2.56		T2101					
							9.7	3.59		3.30					
				100	29	29	6.5	4.21		T2101					
										4.00					
				100	43	43	9.9	4.92		T2101					
										4.92					
				100	75	64	3.4	5.79		T2101				II	
				100	58	0	9.8	7.12		T2101					
										6.45					
				99	67	67				6.71					
							5.2	8.67		T2101					
		0.00m at 18:00								8.00					
11.10.11				100	94	94				T2101					
12.10.11		0.00m at 08:00								8.83					
12.10.11		18:00		100	48	48	8.6	9.37		T2101	-8.41	9.37			
										9.37					End of drillhole at 9.37m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.10.11

CHECKED EDWARD CHENG DATE 13.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-126**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,256.90 N 812,122.00	DATE from 16.08.11 to 17.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.05 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.08.11	0.46 HW	Dry at 08:00						0.46		T2101 0.46	+0.59	0.46			Wash boring.
				100	0	0	NI	0.76		T2101 0.76	+0.29	0.76		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed fine ash TUFF.
				100	30	0	17.2			T2101					Moderately strong to strong, dark grey to greenish grey spotted pink and white, moderately to slightly decomposed fine ash TUFF. Joints are closely to very closely locally medium spaced, rough planar, very narrow to narrow, chlorite occasional kaolin stained, dipping at 10°-20°, 30°-40°, 50°-60°, 70°-80° and 80°-90°.
				100	0	0		1.52		T2101					
				100	39	22		2.04		T2101 2.04					
		2.50m at 18:00		100	55	0	18.3	3.24		T2101 2.53					
16.08.11										T2101					
17.08.11		2.20m at 08:00		98	80	80	>20	3.70		T2101 3.47					
				100	76	44	8.8	4.50		T2101 4.03				III/II	
							14.6	4.98		T2101 4.98					
				100	100	92				T2101 5.63					
				100	66	60	5.7			T2101					
								6.91		T2101					
				99	88	68		7.62		T2101					
							7.2			T2101 8.21					
17.08.11				100	100	53		8.59		T2101 8.59	-7.54	8.59			End of drillhole at 8.59m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 17.08.11

CHECKED EDWARD CHENG DATE 18.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 24.8.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-127**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR05	E 835,237.87 N 812,125.28	DATE from 13.10.11 to 13.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.94 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13.10.11	HW	0.00m at 08:00													Wash boring.
	0.96 HW										-0.02	0.96			
				80				1.16		T2101 0.96	-0.22	1.16			Black, angular to subangular coarse GRAVEL sized rock and wood fragments. (FILL)
				100	30	30	12.1			T2101 1.16					Moderately strong, brownish grey to brown, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow to moderately narrow, manganese and limonite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
								1.74		T2101 1.56					
				95	33	10	16.5			T2101				III	
								2.53		2.53	-1.77	2.71			
				99	26	26	10.9			T2101					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely spaced, smooth planar, narrow to very narrow, limonite, calcite locally kaolin stained, dipping at 10°-20°, 60°-70° and 80°-90°.
								3.63		3.63				II	
				100	0	0	13.2			T2101	-3.22	4.16			
							>20	4.16							
							16.7	4.43		4.43					Strong, dark grey spotted white, slightly deocmposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, very narrow, manganese and limonite stained, dipping at 10°-20° and 40°-50°.
				100	51	51	>20	4.55 4.63		T2101					
							12.2			4.88				II	
								5.04							
				89	48	41	11.1			T2101					
								5.58			-4.64	5.58			
							>20	5.83			-4.89	5.83		II	Strong, brownish grey, slightly decomposed fine ash TUFF.
							15.7			5.98					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite stained, dipping at 10°-20° and 80°-90°.
				99	42	34	10.0	6.34		T2101					
							8.5	6.74		6.93				II	
								7.21							
				100	37	13	9.0			T2101					
		0.00m at 18:00						7.88		7.88					
				100	41	41	14.3	8.16		T2101					
13.10.11							>20	8.37		8.37	-7.43	8.37			End of drillhole at 8.37m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 13.10.11

CHECKED EDWARD CHENG DATE 14.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

PRELIMINARY

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-128**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,245.50 N 812,119.23	DATE from 13.08.11 to 15.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.02 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13.08.11	HW 0.80 HW	Dry at 08:00		39				0.80		T2101 0.00					Brownish grey to dark grey, angular to subangular GRAVEL and COBBLE sized rock fragments. (FILL)
				100	84	84				T2101 0.80	+0.22	0.80			Moderately strong, grey to brownish grey spotted white, moderately decomposed fine ash TUFF. Joints are closely locally medium spaced, rough planar, limonite and chlorite stained, dipping at 10°-20°, 40°-50°, 70°-80° and 80°-90°.
				100	80	66	9.1	2.01		T2101 1.12					
				100	86	81	5.9			T2101 2.01					
				100	78	43	17.8	3.19		T2101 3.04					
				100	92	66	6.5	3.64		T2101 3.64					
				100	90	54		4.10		T2101 4.43				III	
				100	81	67	11.5			T2101 5.41					
				100	64	64				T2101 5.84					
		2.20m at 18:00		100	100	87				T2101 6.09					
13.08.11								6.62		6.62					
15.08.11		3.20m at 08:00		100	100	100				T2101 8.07	-7.05	8.07			
15.08.11															End of drillhole at 8.07m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.08.11

CHECKED EDWARD CHENG DATE 17.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 22.8.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-129A**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,235.22 N 812,116.80	DATE from 11.08.11 to 12.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.00 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.08.11	HW	0.00m at 08:00									+0.65	0.35			Wash boring.
				40						0.35 T2101					Black and brownish grey, angular to subangular COBBLE sized rock and concrete fragments. (FILL)
	1.60 HW				6	0	14.8	1.33			-0.33	1.33			
								1.60		1.60 T2101	-0.60	1.60		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed coarse ash TUFF.
				95	70	0									Moderately strong, black to dark grey spotted pink and white, moderately deocmposed coarse ash TUFF. Joints are closely to very closely locally medium spaced, rough planar, limonite locally kaolin stained, dipping at 10°-20°, 60°-70° and 80°-90°.
				100	95	82	9.3			2.00 T2101					
				100	94	94				3.10 T2101					
		0.00m at 18:00		100	0	0		3.42		3.42 T2101					
11.08.11										3.86					
12.08.11		0.00m at 08:00		98	0	0	>20			T2101				III	
				90	66	66		4.46		4.35 T2101					
							11.0			4.64					
				100	57	33				T2101					
							>20	5.37							
								5.78		5.78					
				100	64	56	11.9			T2101					
								6.62			-5.62	6.62			
										7.03					Strong, black spotted white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow to narrow, chlorite, limonite locally kaolin stained, dipping at 10°-20°, 30°-40° and 80°-90°.
				100	72	66	7.1			T2101					
								7.89						III/II	
							33.3	8.22		8.05					
				99	49	38				T2101					
		0.00m at 18:00					8.6			8.78					
12.08.11				100	100	100		9.15		T2101 9.15	-8.15	9.15			End of drillhole at 9.15m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.08.11

CHECKED EDWARD CHENG DATE 13.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 21.11.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-026**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,336.02 N 812,140.90	DATE from 07.09.11 to 08.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.18 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.09.11	HW										+0.98	0.20			Wash boring.
				88						0.20 T2101 0.60	+0.58	0.60			Black and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
															Wash boring.
	2.98 HW			75	0	0	NI	2.78		2.78 T2101	-1.60	2.78		IV/III	Moderately weak to moderately strong, brownish grey to grey, highly to moderately decomposed fine ash TUFF.
								2.98		2.98	-1.80	2.98			Moderately strong, brownish grey to yellowish grey, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, narrow to very narrow, limonite, manganese and kaolin stained, dipping at 20°-30°, 60°-70° and 80°-90°.
				100	81	71	7.9			T2101					
								4.88		4.48					
				98	77	74				T2101					
										6.00				III	
				99	93	93	3.8			T2101					
										7.51					
				99	91	91		8.28		T2101					
							8.3								
07.09.11								8.88		9.02					
08.09.11				100	45	45	14.3			T2101					
08.09.11							>20	9.65 9.73		9.73	-8.55	9.73			End of drillhole at 9.73m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.09.11

CHECKED EDWARD CHENG DATE 09.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 15.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-041**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,585.66 N 812,171.85	JOB No. J1105S06
MACHINE / No. DR08		DATE from 11.08.11 to 13.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.08.11	PW	Dry at 08:00													Wash boring.
				67						1.45	+5.28	1.46			Grey to dark grey and brownish grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock sized rock fragments. (FILL)
	2.32 PW HW	2.00m at 18:00								T2101 2.32	+4.42	2.32			Wash boring.
11.08.11										3.00	+3.74	3.00			
12.08.11		Dry at 08:00		80						T2101 3.41					Grey to dark grey and brownish grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock sized rock fragments. (FILL)
				74						T2101 3.79					
				88						4.04					
				88						T2101 4.60	+2.14	4.60			
															Wash boring.
				75						6.50 T2101 9.10	-1.76	8.50	× × × × × ×	IV	Moderately weak, brownish grey to pinkish brown, highly decomposed MONZONITE. (Recovered as coarse GRAVEL and COBBLE sized rock fragments)
											-2.36	9.10		V	Wash boring, assumed to be completely decomposed MONZONITE.
											-3.26	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.08.11

CHECKED EDWARD CHENG DATE 16.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. PD/NRW-041

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC

MACHINE / No. DR08

FLUSHING MEDIUM WATER

CO-ORDINATES
E 835,585.66
N 812,171.85

ORIENTATION Vertical

JOB No. J1105S06

DATE from 11.08.11 to 13.08.11

GROUND LEVEL +6.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 3.
								13.71		13.71	-6.97	13.71		V	
				96	37	28	NI								Moderately weak, brownish grey to pinkish brown, highly decomposed MONZONITE. (Recovered as coarse GRAVEL and COBBLE sized rock fragments)
							9.4	14.05		T2101	-7.31	14.05		IV	
								14.37							Moderately strong, grey to brownish grey mottled pink and white, moderately decomposed quartz MONZONITE. Joints are closely spaced, narrow to very narrow, rough planar, limonite and manganese stained, dipping at 10°-20°, 30°-40°, 50°-60° and 80°-90°.
	14.97 HW	2.90m at 18:00		100	0	0	>20	14.74		14.53 T2101				III	
12.08.11							13.3				-8.23	14.97			
13.08.11		4.90m at 08:00						15.04		14.97 T2101					
				100	97	97									Strong, dark grey spotted pink and white locally mottled pink, slightly decomposed quartz MONZONITE. Joints are medium to widely spaced, very narrow, rough planar, limonite locally kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90°.
							2.8			16.47 T2101					
				100	94	94								II	
								17.86		17.86 T2101					
							10.6	18.33							
				89	94	94									
							1.4			19.35 T2101					
				100	100	100					-13.26	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.08.11

CHECKED EDWARD CHENG DATE 16.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-041**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,585.66 N 812,171.85	JOB No. J1105S06
MACHINE / No. DR08		DATE from 11.08.11 to 13.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13.08.11		5.50m at 18:00		100	100	100	1.4	21.82		T2101 20.86 T2101 21.82	-15.08	21.82	× × × × × × × × × × × × × × × × × × × ×	II	As Sheet 2 of 3.
				100	100	100									End of drillhole at 21.82m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.08.11

CHECKED EDWARD CHENG DATE 16.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-041A**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,578.28 N 812,170.99	JOB No. J1105S06
MACHINE / No. DR08		DATE from 09.08.11 to 10.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.02 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
09.08.11	PW	Dry at 08:00													Wash boring.
	2.00 PW HW			78						T2101 2.00 – 2.64	+4.02	2.00			Dark grey to black locally red, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				79						T2101 2.64 – 3.12	+2.90	3.12			Wash boring.
											-3.98	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.08.11

CHECKED EDWARD CHENG DATE 16.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_26032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-041A**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,578.28 N 812,170.99	JOB No. J1105S06
MACHINE / No. DR08		DATE from 09.08.11 to 10.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.02 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 3.
09.08.11 10.08.11	15.33 HW	3.70m at 18:00 3.40m at 08:00		97	39	39	NI	14.74 14.91		T2101 14.74 15.33	-8.72 -8.89	14.74 14.91		IV/III	Moderately weak, brown and grey, highly to moderately decomposed MONZONITE.
				100	67	67	5.8	16.12		T2101 15.33 16.12					Moderately strong to strong, grey spotted black and pink, moderately decomposed MONZONITE. Joints are medium to widely locally closely spaced, very narrow to narrow, rough planar and undulating, chlorite and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
				100	100	96				T2101 16.12 17.36					
				100	100	87	0.2			T2101 17.36 18.91				III	
				100	100	87				T2101 18.91	-13.98	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.08.11

CHECKED EDWARD CHENG DATE 16.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-041A**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,578.28 N 812,170.99	JOB No. J1105S06
MACHINE / No. DR08		DATE from 09.08.11 to 10.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.02 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.08.11		4.10m at 18:00		100	100	87	0.2	21.12		T2101 20.46 T2101 21.12	-15.10	21.12	× × ×

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-045**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,570.70 N 812,170.16	DATE from 22.07.11 to 27.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.77 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.07.11	HW	Dry at 08:00													Wash boring.
				70						T2101	1.62	+4.15	1.62		Dark grey to pinkish brown, angular to subangular coarse GRAVEL and COBBLE sized rock and wood fragments. (FILL)
				34						T2101	2.15				
											2.50	+3.27	2.50		Wash boring.
										T2101	3.85	+1.82	3.95		Dark grey to pinkish brown, angular to subangular coarse GRAVEL and COBBLE sized rock and wood fragments. (FILL)
				76							4.37	+1.40	4.37		Wash boring.
		1.70m at 18:00													
22.07.11											5.70	+0.07	5.70		Brown, subrounded to subangular coarse GRAVEL sized rock fragments with some sandy silt matrix. (ALLUVIUM)
23.07.11		4.20m at 08:00		78						T2101	6.00	-0.23	6.00		Wash boring.
												-4.23	10.00		

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.07.11

CHECKED EDWARD CHENG DATE 29.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-045**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC

MACHINE / No. DR08

FLUSHING MEDIUM WATER

CO-ORDINATES
E 835,570.70
N 812,170.16

ORIENTATION Vertical

JOB No. J1105S06

DATE from 22.07.11 to 27.07.11

GROUND LEVEL +5.77 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 3.
	11.29 HW									T2101 11.29	-5.52	11.29			Pinkish brown and brownish grey, angular GRAVEL and COBBLE sized rock fragments with silty sand matrix. (COLLUVIUM)
				93						T2101 11.69					
				100						T2101 12.22					
				79						T2101 12.85	-7.08	12.85			Moderately strong, greenish grey to pinkish grey, moderately decomposed coarse grained GRANITE. Joints are closely to medium spaced, very narrow to narrow, rough undulating, limonite, kaolin and chlorite coated, dipping at 10°-20°, 30°-40° and 60°-70°.
				98	72	72	5.5	12.85		T2101 14.10	-8.33	14.10		III	Moderately strong, greenish grey to pinkish grey locally pinkish brown, moderately decomposed coarse grained GRANITE. Joints are closely locally very closely and extremely closely spaced, smooth planar to rough undulating, limonite, iron oxide, chlorite and calcite coated, dipping at 40°-50°, 70°-80° and 80°-90°.
				100	14	0	>20	14.30 14.67		T2101 14.88				III	
		3.10m at 18:00		100	0	0	17.0	15.49		T2101 15.49	-9.72	15.49			
23.07.11															
26.07.11		3.60m at 08:00		88	21	0	>20	16.10		T2101 15.87				IV/III	Moderately weak to moderately strong, brown to dark brown, highly to moderately decomposed coarse grained GRANITE, highly fractured.
				100	0	0	NI	16.35		T2101 16.63	-10.86	16.63			
							>20	16.63							Moderately strong to strong, pinkish grey to greenish grey spotted black and grey, moderately to slightly decomposed coarse grained GRANITE. Joints are closely to medium spaced, very narrow to narrow, smooth planar to rough undulating, chlorite, kaolin, calcite locally limonite stained, dipping at 10°-20°, 30°-40°, 60°-70° and 70°-80°.
				100	88	80	11.8			T2101 17.37					
				100	0	0		17.65		T2101 17.65					
				100	92	92				T2101 18.39				III/II	
				97	87	82	6.0			T2101 19.57					
		2.90m at 18:00		100	46	22	>20	19.82		T2101	-14.23	20.00			
26.07.11															

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN
DATE 28.07.11

CHECKED EDWARD CHENG
DATE 29.07.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-045**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,570.70 N 812,170.16	DATE from 22.07.11 to 27.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.77 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
27.07.11		4.10m at 08:00		100	21	21	>20	20.25		T2101 20.03–20.61				III/II	As Sheet 2 of 3.
				100	20	20	10.0	21.05		T2101 20.61–21.11					
							>20	21.40		T2101 21.11–22.40					
27.07.11		3.00m at 18:00		100	64	64	6.0	22.40			-16.63	22.40			End of drillhole at 22.40m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.07.11

CHECKED EDWARD CHENG DATE 29.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-048**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,552.69 N 812,166.51	DATE from 05.08.11 to 06.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.08 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.08.11	PW	Dry at 08:00													Wash boring.
	1.48 PW														
	HW			87						T2101 1.48	+3.60	1.48			Dark grey to brown, angular to subangular GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				84						T2101 1.91 2.02	+3.06	2.02			Wash boring.
							NI	8.79		8.79	-3.71	8.79		IV/III	Moderately weak to moderately strong, brownish pink to brownish grey, highly to moderately decomposed MONZONITE. (Covered by angular to subangular GRAVEL and COBBLE sized rock fragments)
	9.53 HW			99	0	0	7.5	8.96		T2101	-3.88	8.96			
				100	100	95	2.5	9.53		T2101 9.53	-4.45	9.53		III	Moderately strong, brownish pink to brownish grey spotted black, moderately decomposed MONZONITE.
											-4.92	10.00		II	

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.08.11

CHECKED EDWARD CHENG DATE 09.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-048**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,552.69 N 812,166.51	DATE from 05.08.11 to 06.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.08 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	95				T2101					Joints re closely spaced, rough planar, narrow to very narrow, iron oxide, manganese and kaolin stained, dipping at 10°-20° and 80°-90° from 9.15-9.53m. Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are medium to widely locally closely spaced, rough planar, very narrow, limonite and kaolin stained, dipping at 10°-20°, 30°-40° and 80°-90° from 10.71-11.07m.
				99	99	99	2.5			11.07 T2101					
										11.80 T2101				II	
				99	99	99				12.65 T2101					
		2.90m at 18:00		100	100	100		13.57							
05.08.11											-8.92	14.00			
06.08.11		3.20m at 06:00					2.8			14.14 T2101					Moderately strong, greenish grey mottled pink, moderately decomposed MONZONITE. Joints are closely spaced, very narrow, rough planar, chlorite and limonite stained, dipping at 10°-20°, 40°-50°, 70°-80° and 80°-90° from 15.63-16.25m and 16.71-16.87m.
				100	86	74		14.99							
							11.9	15.41							
										15.63 T2101				III	
				100	59	59	9.6								
							>20	16.24 16.39		16.39 T2101					
06.08.11		2.70m at 18:00		100	90	47	12.8	17.25		17.25	-12.17	17.25			End of drillhole at 17.25m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.08.11

CHECKED EDWARD CHENG DATE 09.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-051**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR05	E 835,544.62 N 812,165.63	DATE from 03.08.11 to 05.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.09 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
											+5.09	0.00			Wash boring.
				63						T2101 0.50	+4.59	0.50			Pale grey to brownish grey, angular to subangular GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL)
										2.00	+3.09	2.00			Wash boring.
				97	64	58	4.0	9.52		T2101 9.52	-4.43	9.52			
											-4.91	10.00		III	Moderately strong, dark grey spotted black and white, moderately decomposed MONZONITE.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.08.11

CHECKED EDWARD CHENG DATE 07.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-051**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR05	E 835,544.62 N 812,165.63	DATE from 03.08.11 to 05.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.09 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				97	64	58	4.0	10.30		T2101 10.30	-5.21	10.30	× ×	III	As Sheet 1 of 2.
								10.55		10.55	-5.46	10.55		V	Wash boring, assumed to be completely decomposed MONZONITE.
				100	100	100	1.6			T2101			× ×		Strong, dark grey, slightly decomposed MONZONITE. Joints are widely to medium spaced, rough planar to undulating, very narrow, chlorite, limonite and kaolin stained, dipping at 10°-20°.
				99	97	97		12.02		T2101 12.02					
								13.12		T2101 13.12					
				100	100	100				T2101				II	
								14.64		T2101 14.64					
				100	100	100	0.9			T2101					
								16.12		T2101 16.12					
				100	93	93				T2101					
								17.44			-12.35	17.44			
								17.60		T2101 17.60			+ +		Moderately strong, greenish grey mottled red, moderately decomposed coarse grained GRANITE. Joints re closely spaced, rough planar, very narrow to narrow, limonite stained, dipping at 10°-20° and 80°-90°.
				100	63	39	11.5			T2101			+ +	III	
								18.31		18.31	-13.22	18.31			End of drillhole at 18.31m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.08.11

CHECKED EDWARD CHENG DATE 07.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-213**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,589.98 N 812,189.31	DATE from 18.10.11 to 19.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.75 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.10.11	PW	Dry at 08:00									+1.35	0.40			Wash boring.
				67						0.40 T2101 1.00	+0.75	1.00			Dark grey to dark brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
															Wash boring.
				60						1.90 T2101 2.70	-0.15	1.90			Dark grey to dark brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	3.00 PW HW 3.69 HW										-0.95	2.70			Wash boring.
				71						3.69 T2101	-1.94	3.69			
								3.90		3.80 T2101	-2.15	3.90			Dark grey to dark brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				100	69	58	3.2	4.53						III	Moderately strong, pinkish brown spotted black and green, moderately decomposed coarse grained GRANITE. Joints are closely to medium spaced, rough planar, very narrow, chlorite, limonite and manganese stained, dipping at 40°-50°, 60°-70° and 80°-90°.
				100	88	80	5.8	5.56		4.93 T2101					
				100	38	38	10.9	6.48		6.21 T2101					
							7.3	7.57		7.57 T2101					
				100	41	36	2.5	8.35							
							6.8	9.09		9.09 T2101					
				100	19	19	14.8	9.36			-7.48	9.23			Moderately strong, pinkish grey spotted black and white, moderately decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow to narrow, chlorite, kaolin, limonite and
							6.2							III	
							11.5	9.84			-8.25	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.10.11

CHECKED EDWARD CHENG DATE 20.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-213**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,589.98 N 812,189.31	DATE from 18.10.11 to 19.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.75 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	19	19		10.10		T2101 10.33					manganese stained, dipping at 10°-20°, 20°-30°, 70°-80° and 80°-90°.
				100	52	52	4.4			T2101 11.53					
18.10.11		0.00m at 18:00						11.45							
19.10.11		0.00m at 08:00		100	21	15	>20	11.61		T2101 12.48				III	
							14.9								
19.10.11		0.00m at 18:00		100	34	34	11.4	12.48		T2101 12.92	-11.17	12.92			End of drillhole at 12.92m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.10.11

CHECKED EDWARD CHENG DATE 20.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-214**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,579.43 N 812,187.77	DATE from 19.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.72 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.10.11	PW	Dry at 08:00									+1.17	0.55			Wash boring.
				71						T2116	0.55				Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											+0.82	0.90			Wash boring.
	3.00 PW														
	HW														
	4.15 HW														
	NW						NI	4.15			-2.43	4.15		IV/III	Moderately weak to moderately strong, pinkish brown, highly to moderately decomposed MONZONITE.
								4.32			-2.60	4.32			
							7.5								Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, limnite and manganese stained, dipping at 10°-20° and 30°-40°.
				97	80	65	>20	4.65		T2101				II	
							6.8	5.04							
								5.46			5.46 -3.76	5.48			
	5.97 NW													V	Wash boring, assumed to be completely decomposed MONZONITE.
							>20	5.97			5.97 -4.25	5.97			
								6.20			-4.48	6.20		III	Moderately strong, pinkish grey to yellowish grey, moderately deocmposed MONZONITE. Joints are closely spaced, rough planar, narrow, limonite stained, dipping at 10°-20°.
							4.3								
				100	92	80	13.6	6.67		TNW				II	Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium spaced, rough planar, very narrow, limonite locally chlorite stained, dipping at 10°-20° and 80°-90°.
		0.00m at 18:00						6.89							
19.10.11							5.0				7.44				
20.10.11		0.00m at 08:00		100	52	52				TNW					
								7.90			7.94 -6.22	7.94			
				100	0	0	9.2			TNW				III	Moderately strong, yellowish grey spotted black and white, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, limonite locally manganese stained, dipping at 10°-20°, 60°-70° and 80°-90°.
								8.68			8.88 -7.16	8.88			
				100	12	0	2.6			TNW				II	Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are closely to medium spaced, chlorite and limonite stained, dipping at 20°-30° and 80°-90°.
												10.00 -8.28			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-214**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,579.43 N 812,187.77	DATE from 19.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.72 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.10.11		0.00m at 18:00		100	12	0	7.5	10.02		TNW 10.30					As Sheet 1 of 2.
				100	72	61	14.3	10.55		TNW					
							5.2	10.97						II	
							18.5	11.74		TNW 11.74					
				100	100	77	2.1	12.01							
								12.98		12.98	-11.26	12.98			End of drillhole at 12.98m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-215**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,569.25 N 812,186.40	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.10.11	HW	Dry at 08:00													Wash boring.
	5.93 HW							5.93			5.93 -4.22	5.93			
				100	100	100	1.4			T2101					Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium to widely spaced, rough planar, very narrow, slightly kaolin stained, dipping at 20°-30° and 60°-70°.
								7.31			7.31			II	
				100	75	75	2.5			T2101					
		1.00m at 18:00		98	27	27	5.4	8.51		T2101	8.51 -6.80	8.51		III	Moderately strong, yellowish grey to pinkish grey spotted black and white, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 10°-20° and 80°-90°.
20.10.11 21.10.11		1.00m at 08:00		100	65	65	2.1	9.07		T2101	9.07 -7.28	8.99		II	Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium to closely locally widely spaced, rough planar, very
											-8.29	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 13.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-215**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,569.25 N 812,186.40	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.10.11				100	65	65	2.1	10.48		T2101 10.48					narrow, slightly chlorite stained,dipping at 10°-20°, 40°-50° and 80°-90°.
							8.8	10.82							
				100	93	90	1.9	11.88		T2101 11.88				II	
				100	43	21	13.1	12.49		T2101 12.49	-10.78	12.49			End of drillhole at 12.49m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 13.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-216**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,549.84 N 812,183.75	DATE from 18.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.10.11	HW	Dry at 08:00													Wash boring.
				60						T2101 0.40–0.90	+1.21	0.40			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											+0.71	0.90			Wash boring.
				90						T2101 1.20–1.50	+0.41	1.20			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											+0.11	1.50			Wash boring.
	5.55 HW							5.55			-3.94	5.55			
	NW			100	100	100	0.0			T2101 5.55–6.37				II	Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium to closely spaced, rough planar, limonite stained, dipping at 60°-70°.
				60	37	37	NR	6.37 6.47		T2101 6.37–6.88					
		0.00m at 18:00		100	83	83	1.8			T2101 6.88–7.60					
18.10.11								7.60			-5.99	7.60			
19.10.11		0.00m at 08:00						7.91			-6.30	7.91		V	Wash boring, assumed to be completely decomposed MONZONITE.
	8.51 NW			97	55	0	0.0	8.51		T2101 7.91–8.51				II	Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are closely spaced, rough planar and undulating, limonite and kaolin stained, dipping at 10°-20° and 60°-70°.
				63	63	63	2.6	8.89		TNW 8.51–9.11	-7.28	8.89			
							NR	9.11			-7.50	9.11		V	No recovery assumed to be completely decomposed MONZONITE.
				67	0	0	5.9	9.45		TNW 9.11–9.62	-7.84	9.45		III	Moderately strong, brownish grey, moderately decomposed MONZONITE with subvertical joint from 9.11-9.45m.
							NR	9.62			-8.01	9.62		V	No recovery assumed to be completely decomposed
				96	57	57	3.3			TNW	-8.39	10.00		II	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-216**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,549.84 N 812,183.75	DATE from 18.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				98	57	57	3.3	10.22		TNW 10.22				II	MONZONITE. Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium to closely locally widely spaced, very narrow, limonite, kaolin locally chlorite stained, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
							1.4				-9.11	10.72		III	
				98	91	91	>20	10.92 10.99		TNW	-9.31	10.92			
19.10.11		0.00m at 18:00					3.1							II	10.72- 10.92m: Moderately decomposed MONZONITE.
20.10.11		0.00m at 08:00						11.97		11.72					
				99	79	63	9.2			TNW	-10.63 -10.73	12.24 12.34		III	
								12.73		12.73					12.24- 12.34m: Moderately decomposed MONZONITE.
							14.0	13.16							
				100	35	28				TNW				II	
							5.8			14.14					
				100	57	48				TNW					
								14.70		14.70					
		0.00m at 18:00		98	28	28	6.6			TNW					
20.10.11								15.31		15.31	-13.70	15.31			End of drillhole at 15.31m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-217**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,540.82 N 812,182.58	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.56 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.10.11	PW														Wash boring.
				70						0.35 T2118	+1.21	0.35			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
	1.85 PW HW			68						1.85 T2116					
										2.50	-0.94	2.50			Wash boring.
	5.68 HW							5.68		5.68	-4.12	5.68			
20.10.11				100	0	0	4.9			T2101				III	Moderately strong, grey to brownish grey spotted black and white, moderately decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, chlorite and limonite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
21.10.11							5.6	6.71		6.71					
				99	37	37	6.7	7.07		T2101					
								7.96		7.96	-6.40	7.96			
				99	30	30	2.6			T2101				II	Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are closely to widely spaced, rough planar, very narrow, chlorite stained, dipping at 70°-80° and 80°-90°.
								9.47		9.47					
				100	97	97	1.0			T2101	-8.44	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-217**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,540.82 N 812,182.58	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.56 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.10.11				100	97	97	1.0	11.41		T2101 10.99					As Sheet 1 of 2.
				100	50	50	5.2	12.18		T2101 12.18	-10.62	12.18		II	End of drillhole at 12.18m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-225**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,593.67 N 812,182.22	DATE from 22.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.76 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.10.11	PW	Dry at 08:00													Wash boring.
				85						T2101 0.50–1.15	+1.26	0.50			Dark grey to brown, angular to subangular COBBLE sized rock fragments. (FILL)
	1.80 PW										+0.61	1.15			Wash boring.
	HW							1.80			-0.04	1.80			Moderately strong, brownish grey to pinkish brown, moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar, very narrow to narrow, limonite, manganese and chlorite stained, dipping at 30°-40°, 60°-70° and 80°-90°.
	3.00 HW			99	0	0	10.0			T2101 1.60–3.00					
				100	0	0	10.9	3.00		T2101 3.00–3.92					
							>20	3.92 4.07							
				100	0	0	13.3			T2101 3.92–4.67					
				100	85	56	13.2	4.67		T2101 4.67–5.53					
							11.0	5.20							
				100	21	15	15.0	5.93 6.13		T2101 5.53–6.48				III	
							8.1								
				99	55	42	>20	6.99 7.12		T2101 6.48–7.64					
							9.1								
								7.78							
		0.00m at 18:00		100	45	45	4.1			T2101 7.64–8.75					
22.10.11 24.10.11		0.00m at 08:00													
				100	49	49		9.26		T2101 8.75–9.80					
							15.2								
				100	39	33				T2101	-8.24	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-225**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,593.67 N 812,182.22	DATE from 22.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.76 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.05							As Sheet 1 of 2.
				100	39	33	5.6			T2101				III	
							>20	10.94							
								11.35		11.25					
											-9.99	11.75			Strong, dark grey mottled pink and black, slightly decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, chlorite and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
				99	36	28	7.8			T2101				II	
								12.63		12.63					
24.10.11		0.00m at 18:00		100	85	74	7.2			T2101					
								13.60		13.60	-11.84	13.60			End of drillhole at 13.60m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-226**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,582.64 N 812,180.66	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.72 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.10.11	PW	Dry at 08:00		71						0.35 T2116 0.80	+1.37	0.35			Wash boring.
											+0.92	0.80			Dark grey to black, angular to subangular COBBLE sized rock fragments. (FILL)
				61						1.12 T2116 1.30	+0.60	1.12			Wash boring.
											+0.42	1.30			Dark grey to black, angular to subangular COBBLE sized rock fragments. (FILL)
		0.00m at 18:00													Wash boring.
20.10.11	3.00 PW														
21.10.11	HW	0.00m at 08:00													
	4.07 HW							4.07		4.07 T2101	-2.35	4.07		III	Moderately strong, dark grey spotted black and pink, moderately decomposed MONZONITE. Joints are closely locally very closely spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20°, 50°-60° and 80°-90°.
	NW			99	50	50	5.1 NI	5.05 5.16			-3.44	5.16			
				100	94	94	2.8			5.44 T2101				II	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are medium spaced, rough planar, very narrow, limonite stained, dipping at 10°-20° and 40°-50°.
	7.25 NW			100	100	100		6.94		6.86 TNW 6.94	-5.22	6.94		V	Wash boring, assumed to be completely decomposed MONZONITE.
				100	97	91	4.6	7.25		7.25 TNW	-5.53	7.25			Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are medium to widely locally closely spaced, rough planar, very narrow, limonite stained, dipping at 10°-20° and 80°-90°.
				99	74	73	2.8	7.90		7.90 TNW				II	
				100	100	100	0.0	9.34		9.34 TNW	-8.28	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-226**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR11	E 835,582.64 N 812,180.66	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.72 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.10.11		0.00m at 18:00		100	100	100	0.0	10.77		TNW 10.77					As Sheet 1 of 2.
							18.2	11.10							
				99	96	80	2.4	11.92		TNW 11.90					
				100	94	94	1.3	13.41		TNW 13.41				II	
				100	100	100	0.0	14.59		TNW 14.59	-12.87	14.59			End of drillhole at 14.59m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-227**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR21	E 835,571.05 N 812,179.07	DATE from 21.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.10.11	HW	Dry at 08:00													Wash boring.
		1.00m at 18:00		88	71	71					-1.34	3.03			
21.10.11										3.03 T2101			× × × × × × × × × × × ×	II	Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. (CORESTONE)
22.10.11		1.00m at 08:00		98	96	78				3.44 T2101					
										4.39	-2.70	4.39			
														V	Wash boring, assumed to be completely decomposed MONZONITE.
							3.7	6.58		6.58	-4.89	6.58	× ×	II	Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are medium spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20° and 40°-50°.
				79	22	22	NI	6.85		6.85 T2101	-5.16	6.85	× × × × × ×	IV	Moderately weak, brown and dark brown, highly decomposed MONZONITE, highly fractured.
								7.50		7.50	-5.81	7.50			
	8.13 HW													V	Wash boring, assumed to be completely decomposed MONZONITE.
								8.13		8.13	-6.44	8.13			
				96	96	89	15.0	8.53		8.13 T2101 8.40			× × × × × × × × × × × ×	II	Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, chlorite, limonite and kaolin stained, dipping at 20°-30° and 50°-60°.
				99	76	50	8.0	9.53		TNW					
				95	0	0	9.8			9.77 TNW	-8.16	9.85			
											-8.31	10.00	× ×	III	Moderately strong, greenish grey spotted pink

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-227**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR21	E 835,571.05 N 812,179.07	DATE from 21.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.69 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				95	0	0	9.8	10.32		TNW				III	moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar, narrow to very narrow, chlorite and kaolin stained, dipping at 40°-50°, 70°-80° and 80°-90°.
				98	0	0		11.27		TNW					
				100	94	69	6.3	11.53		TNW	-9.89	11.58			Strong, greenish grey to dark grey spotted and mottled pink and black, slightly decomposed MONZONITE. Joints are medium to closely spaced, rough planar, very narrow, chlorite and limonite stained, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
								12.54		TNW					
22.10.11		1.20m at 18:00		98	62	55	9.8	13.46		TNW				II	
24.10.11		1.20m at 08:00					10.0	13.96							
24.10.11				99	49	43	1.1	14.84		TNW	-13.15	14.84			End of drillhole at 14.84m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-228**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR21	E 835,559.32 N 812,177.48	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.65 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	HW	Dry at 08:00													Wash boring.
								5.78		5.78	-4.13	5.78			
	6.84 HW	1.00m at 18:00		100	58	58	2.4	6.62		T2101					Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are widely to closely spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 10°-20°, 60°-70°, 70°-80° and 80°-90°.
24.10.11 25.10.11		1.00m at 08:00		99	55	55	5.0	8.23		6.84 T2101				II	
				100	98	98	3.2			8.23 T2101					
				99	93	85				9.73 T2101	-8.35	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-228**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR21	E 835,559.32 N 812,177.48	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.65 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
				99	93	85	3.2	11.08		T2101 11.19				II	
							16.3	11.51			-9.86	11.51			
				98	34	34	>20	11.66		T2101 12.18	-10.01	11.66		III	Moderately strong, yellowish brown to pinkish brown spotted pink and green, moderately decomposed MONZONITE, highly fractured.
							4.2								Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, chlorite locally limonite stained, dipping at 10°-20° and 30°-40°.
				100	92	44		12.61		TNW				II	
							19.1	13.08		13.08					
25.10.11		1.00m at 18:00		100	88	69	10.3	13.86		TNW 13.86	-12.21	13.86			End of drillhole at 13.86m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-229**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,546.53 N 812,175.78	DATE from 21.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.10.11	0.43 PW HW	0.00m at 08:00		32						0.43 T2116 1.05	+1.20 +0.58	0.43 1.05			Wash boring. Yellowish brown and grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL) Wash boring.
								5.41		5.41 T2101 6.09	-3.78 -4.46	5.41 6.09	× ×	III	Moderately strong, brownish grey to dark grey, moderately decomposed MONZONITE. Joints are medium spaced, rough planar, narrow, limonite and kaolin stained, dipping at 80°-90°.
21.10.11 22.10.11	6.28 HW 6.61 NW	0.00m at 18:00 0.00m at 08:00		62	0	0	NI	6.09 6.28		6.28 T2101 6.61 TNW 6.94	-4.65	6.28	× ×	V	Wash boring, assumed to be completely decomposed MONZONITE.
				100 94	18 52	18 52	6.1						× ×	II	Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are widely to medium spaced, rough planar, very narrow, slightly kaolin stained, dipping at 10°-20°, 60°-70° and 80°-90°.
				99	62	53	2.5 4.3	7.75 8.44		TNW 8.44	-6.35 -6.81	7.88 8.44	× ×	III	Moderately strong, greenish grey spotted pink, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, chlorite and kaolin feldspar accumulate along joint, dipping at 60°-70°.
				98	98	98	1.2			TNW 9.90	-8.37	10.00	× ×	II	Strong, dak grey spotted pink and black, slightly decomposed MONZONITE. Joints are widely to closely spaced, rough planar, very narrow, rough planar, slightly chlorite stained, dipping at 10°-20°, 60°-70° and 70°-80°.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司	DRILLHOLE RECORD CONTRACT No. 903	HOLE No. **PD/NRW-229** SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,546.53 N 812,175.78	DATE from 21.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	84	80	13.0	10.15 10.38							As Sheet 1 of 2.
				100	84	80	2.8			TNW					
22.10.11		0.00m at 18:00						11.45		11.45					
24.10.11		0.00m at 08:00		100	80	75	1.3			TNW				II	
24.10.11		0.00m at 18:00						12.99		12.99	-11.36	12.99			End of drillhole at 12.99m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 24.10.11	DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-230**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,533.66 N 812,174.07	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	PW	Dry at 08:00													Wash boring.
	0.63 PW										0.63 +0.97	0.63			
	PW			75						T2116					Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
					11	11		1.74			-0.14	1.74			
				99	90	90	1.0			T2101	1.86			II	Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are widely locally closely spaced, rough planar, very narrow, limonite and kaolin stained, dipping at 10°-20° and 20°-30°.
							>20	2.70 2.79			-1.19 2.79	2.79			
														V	Wash boring, assumed to be completely decomposed MONZONITE.
	4.00 PW							4.00			-2.40 4.00	4.00			
	NW			108	100	100	2.2			T2101					Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are widely to medium spaced, rough planar, very narrow locally narrow, limonite and chlorite stained, dipping at 20°-30°, 60°-70° and 80°-90°.
		0.00m at 18:00									5.50				
24.10.11 25.10.11		0.00m at 08:00		93	93	93	2.1	5.96		T2101					
	6.93 NW							6.93			6.93			II	
				99	99	99	0.4			TNW					
											8.47				
				100	87	87	3.0	9.34		TNW					
											-8.40	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-230**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR22	E 835,533.66 N 812,174.07	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.60 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.10.11		0.00m at 18:00		99	99	99	0.8	10.01 11.20		10.01 TNW 11.20	-9.60	11.20	× × × × × × × × × ×	II	As Sheet 1 of 2. End of drillhole at 11.20m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-017**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR21	E 835,559.35 N 812,185.04	DATE from 19.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.66 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.10.11	HW	Dry at 08:00		88						T2101 0.40–0.80	+1.26	0.40			Wash boring.
											+0.86	0.80			Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
															Wash boring.
				98	90	90				T2101 4.31–4.89	-2.65	4.31	× ×	II	Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. (CORESTONE)
	5.35 HW			89	89	89				T2101 4.89–5.35	-3.69	5.35	× ×		
	NW													V	Wash boring, assumed to be completely decomposed MONZONITE.
	7.33 NW														
				62	0	0		7.49		TNW 7.33–7.49	-5.67	7.33	× ×	IV/III	Moderately weak to moderately strong, dark grey to brownish grey, highly to moderately MONZONITE.
							16.1				-5.83	7.49	× ×		
				100	76	76	>20 15.0	7.80 7.91 8.11		TNW 7.49–8.11			× ×		Strong, pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are widely to closely locally very closely spaced, rough planar to undulating, very narrow, chlorite and limonite stained, dipping at 10°-20° and 80°-90°.
							1.3						× ×		
				100	91	80		8.90		TNW 8.11–9.58			× ×	II	
							7.8						× ×		
				99	99	99	3.1	9.67		TNW 9.58–10.00	-8.34	10.00	× ×		

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-017**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR21	E 835,559.35 N 812,185.04	DATE from 19.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.66 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							3.1	10.32							As Sheet 1 of 2.
				99	99	99				TNW 11.01					
				100	95	95	1.1			TNW 12.48				II	
				99	96	96	11.4	13.04		TNW 13.61					
19.10.11		0.00m at 18:00					>20	13.48 13.61							
20.10.11		0.00m at 08:00													
				100	65	65	2.6			TNW					
20.10.11		0.00m at 18:00						15.12		15.12	-13.46	15.12			End of drillhole at 15.12m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-018**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,561.30 N 812,168.54	JOB No. J1105S06
MACHINE / No. DR08		DATE from 16.07.11 to 20.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.07.11	HW	Dry at 08:00													Wash boring.
				85					T2101	1.20	+3.83	1.20			Angular COBBLE and BOULDER sized rock fragments. (FILL)
										1.85	+3.18	1.85			Wash boring.
				33					T2101	2.55	+2.48	2.55			Angular COBBLE and BOULDER sized rock fragments. (FILL)
										2.84	+2.19	2.84			Wash boring.
16.07.11		4.10m at 18:00													
18.07.11		4.90m at 08:00													
				100					T2101	8.19	-3.16	8.19			Angular COBBLE and BOULDER sized rock and brick fragments. (FILL)
										8.68	-3.65	8.68			Wash boring.
	9.60 HW			98	89	39	NI 13.0	9.60 9.74	T2101	9.60	-4.57	9.60		IV/III	Moderately weak to moderately strong, pinkish brown, highly to moderately decomposed medium grained
											-4.71	9.74		III	
											-4.97	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.07.11

CHECKED EDWARD CHENG DATE 23.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-018**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,561.30 N 812,168.54	DATE from 16.07.11 to 20.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				98	89	39	13.0	11.00		T2101 10.83	-5.97	11.00		III	GRANITE. Strong, brownish pink spotted black, slightly decomposed medium grained GRANITE. Joints are closely to medium locally very closely spaced, rough planar, very narrow, iron stained, dipping at 10°-20°, 30°-40° and 50°-60°. 9.74- 11.00m: Moderately decomposed GRANITE.
				100	100	83				T2101 11.73					
				100	100	85	7.9			T2101 13.17					
				100	100	71		13.80		T2101 14.37					
				99	99	99	1.4	15.21		T2101 15.21				II	
				100	100	70	11.0	16.25		T2101 16.25					
18.07.11		4.60m at 18:00		94	94	20	>20	17.34		T2101 17.14					
19.07.11		5.10m at 08:00		100	100	70	0.0 >20	17.60 17.80		T2101 18.12					
				100	100	82	5.3			T2101 18.66					
				100	75	55	>20	19.35		T2101 19.61	-14.97	20.00			
				100	81	69	10.0 >20	19.65 19.81							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.07.11

CHECKED EDWARD CHENG DATE 23.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-018**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR08	E 835,561.30 N 812,168.54	DATE from 16.07.11 to 20.07.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +5.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.07.11		3.00m at 18:00		100	81	69	8.3	20.00		T2101					As Sheet 2 of 3.
							>20	20.60 20.80		20.67					
				100	91	73				T2101					
										21.49					
				100	100	80	11.5			T2101				II	
										22.07					
				100	100	100				T2101					
								22.71		22.71	-17.68	22.71			End of drillhole at 22.71m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.07.11

CHECKED EDWARD CHENG DATE 23.07.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 12.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-110**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,334.36 N 812,148.17	DATE from 10.09.11 to 12.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.14 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.09.11	HW	Dry at 08:00													Wash boring.
				44						0.60 T2101 1.95	+0.54	0.60			Brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments with some clayey silt matrix. (FILL)
	4.19 HW										-0.81	1.95			Wash boring.
			100	56	56	6.0		4.19		4.19 T2101	-3.05	4.19			Moderately strong, dark grey to brownish grey, moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, very narrow to narrow, kaolin, limonite, manganese and occasional chlorite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
			98	70	48	5.9 11.9		4.69 5.03		4.69 T2101					
			100	100	100	4.1		5.62		5.62 T2101					
			100	78	57	10.9		6.85		6.37 T2101 7.28				III	
			100	0	0	>20		7.49 7.80		T2101 7.91					
			100	40	40	3.7 12.9		8.61 9.31		T2101 9.31					
10.09.11		4.51m at 18:00	100	0	0	7.8		9.82		T2101 9.82	-8.86	10.00			
12.09.11		4.59m	100	0	0	8.3									

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 11.1.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.09.11

CHECKED EDWARD CHENG DATE 14.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-110**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,334.36 N 812,148.17	DATE from 10.09.11 to 12.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.14 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.09.11		4.60m 08:00 18:00		100	0	0	8.3	10.54		T2101 10.54	-9.40	10.54		III	As Sheet 1 of 2. End of drillhole at 10.54m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.09.11

CHECKED EDWARD CHENG DATE 14.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-111**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,324.53 N 812,145.93	DATE from 14.09.11 to 15.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
14.09.11	HW	Dry at 08:00									+0.53	0.60			Wash boring.
				46						0.60 T2101 1.90					Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											-0.77	1.90			Wash boring.
	3.53 HW							3.53			-2.40	3.53			
			100	77	77		5.7			3.53 T2101 3.79				III	Moderately strong, dark grey spotted black and white, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow to moderately narrow, manganese, kaolin and limonite stained, dipping at 10°-20° and 80°-90°.
			90	30	30		NI	4.23		T2101	-3.10	4.23		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed fine ash TUFF.
								4.50			-3.37	4.50			
			98	73	63		5.7			4.50 T2101					Moderately strong, dark grey locally brownish grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, narrow to very narrow, manganese, chlorite and limonite stained, dipping at 50°-60°, 60°-70° and 80°-90°.
							15.4	5.37 5.63							
			96	41	41		7.1			5.63 T2101					
							>20	6.62 6.70		6.62 T2101				III	
		4.43m at 18:00	100	66	66		3.1								
14.09.11							>20	7.35							
15.09.11		4.50m at 08:00						7.53		7.53 T2101					
							11.1	7.98							
			100	87	87		2.7								
								8.71		8.71 T2101	-7.58	8.71			Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are closely spaced, smooth planar, very narrow, kaolin and chlorite stained, dipping at 10°-20° and 80°-90°.
							7.4								
			100	84	75		13.2	9.25						II	
			100	55	55		4.9	9.63		9.63 T2101	-8.87	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.09.11

CHECKED EDWARD CHENG DATE 16.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-111**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,324.53 N 812,145.93	DATE from 14.09.11 to 15.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.09.11		4.39m at 18:00		100	55	55	4.9	11.06		T2101 11.06	-9.93	11.06		II	As Sheet 1 of 2. End of drillhole at 11.06m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 15.09.11

CHECKED EDWARD CHENG DATE 16.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-089**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,420.97 N 812,159.98	DATE from 20.09.11 to 21.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.30 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.09.11	PW	Dry at 08:00		100						0.35 T2101 0.81	+0.95	0.35			Wash boring.
				95						T2101 1.55					Dark grey to brownish grey, angular to subangular GRAVEL, COBBLE and occasional boulder sized rock fragments. [FILL]
				95						T2101 1.97					
				75						T2101 2.17	-0.87	2.17			
	5.00 PW HW														Wash boring.
				89	0	0	NI	7.14		7.14 T2101 7.61	-5.84	7.14	× × × ×	III/IV	Moderately weak to moderately strong, dark brown to dark grey, Highly to moderately decomposed MONZONITE.
								7.61			-6.31	7.61		V	Wash boring, assumed to be completely decomposed MONZONITE.
20.09.11		4.53m at 18:00									-8.17	9.47			
21.09.11		4.44m at		89	0	0	NI	9.47		9.47 T2101 9.75	-8.45	9.75	× ×	III/IV	Moderately weak to moderately strong, dark brown to dark grey, highly to moderately decomposed MONZONITE.
				100	57	38	>20	9.75			-8.70	10.00	× ×	III	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.09.11

CHECKED EDWARD CHENG DATE 22.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-089**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,420.97 N 812,159.98	DATE from 20.09.11 to 21.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.30 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.09.11	14.60 HW	08:00 4.28m at 18:00		100	57	38	12.9	10.00		T2101				III	Moderately Strong, dark grey to brownish grey spotted white and pink, moderately decomposed MONZONITE. Joints are closely to medium spaced, rough planar, narrow, manganese and kaolin stained, dipping at 10°-20° and 30°-40°.
								10.52			-9.32	10.62			
				100	100	100	3.4	10.62		T2101					Strong, dark grey spotted white and pink, slightly decomposed MONZONITE. Joint are medium to widely spaced, rough planar, very narrow, chlorite and kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90° from 14.13-14.23m.
								11.92							
				100	100	100	0.9	12.10		T2101					
								13.27							
				100	100	83	9.1	13.27		T2101				II	
								13.39							
							3.2	13.60							
				99	79	79				T2101					
							3.3	14.22							
								14.83							
				99	99	99	0.6			T2101					
								16.38			-15.08	16.38			End of drillhole at 16.38m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.09.11

CHECKED EDWARD CHENG DATE 22.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-039**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,415.27 N 812,159.78	JOB No. J1105S06
MACHINE / No. DR09		DATE from 15.09.11 to 16.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.09.11	PW	Dry at 08:00		88						0.39 T2101 0.79	+0.93	0.39			Wash boring.
				93						T2101 1.99	-0.67	1.99			Dark grey to brownish grey, angular to subangular coarse GRAVEL, COBBLE and BOULDER sized rock fragments. (FILL)
	5.00 PW HW														Wash boring.
15.09.11		4.55m at 18:00						7.23		7.23	-5.91	7.23			
16.09.11		4.37m at 08:00		98	0	0	NI	7.83		T2101 7.83	-6.51	7.83		IV/III	Moderately weak to moderately strong, brownish grey to pinkish brown, highly to moderately decomposed MONZONITE. Joints are closely spaced, rough planar, narrow locally moderately narrow, manganese, limonite and kaolin stained, dipping at 20°-30° and 50°-60°.
	8.77 HW										-7.45	8.77		V	Wash boring, assumed to be completely decomposed MONZONITE.
				83	0	0	NI	8.77 8.95		8.77 T2101 8.95	-7.63	8.95		IV	Moderately weak, pinkish brown to grey, highly decomposed MONZONITE. (Stiff, sandy SILT with gravels)
				100	66	62	>20 6.4	9.13		T2101	-8.68	10.00		III	Moderately strong, pinkish grey to brownish grey spotted pink and black, moderately decomposed MONZONITE. Joints are closely to medium locally very closely spaced, rough planar, narrow to very

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.09.11

CHECKED EDWARD CHENG DATE 17.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 24.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-039**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,415.27 N 812,159.78	DATE from 15.09.11 to 16.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							16.0	10.07 10.32		10.07					narrow, limonite, manganese and chlorite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
				99	74	68	6.3	11.11		T2101				III	
							17.9	11.50		11.40	-10.29	11.61			
				99	93	90	5.1	12.87		T2101					Strong, pinkish grey spotted and mottled pink, slightly decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, chlorite and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
							13.5	13.24		12.87					
				100	95	84	2.8	13.96		T2101				II	
							8.3	14.32		14.32					
16.09.11		4.25m at 18:00		100	94	94	2.9	15.68		T2101	-14.36	15.68			End of drillhole at 15.68m.
										15.68					

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.09.11

CHECKED EDWARD CHENG DATE 17.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 24.12.11

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-092**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,409.77 N 812,158.20	DATE from 17.09.11 to 19.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.25 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
17.09.11	PW	Dry at 08:00								0.35	+0.90	0.35			Wash boring.
				100						T2116					Dark grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock and wood fragments. (FILL)
				80						1.25 T2116 1.75	-0.50	1.75			
	5.00 PW HW														Wash boring.
				96	0	0				7.18 T2101	-5.93	7.18			
											-6.18	7.43			Dark grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock and wood fragments. (FILL)
		4.35m at 18:00		97	0	0				7.88 T2101	-7.06	8.31		III	Moderately strong, dark grey spotted white and pink, moderately decomposed MONZONITE. (CORESTONE)
17.09.11											-7.35	8.60		IV/III	Moderately weak to moderately strong, pinkish brown, highly to moderately decomposed MONZONITE.
19.09.11		4.45m at 08:00								8.60				V	Wash boring, assumed to be completely decomposed MONZONITE.
				82	0	0				9.08 T2101	-7.83	9.08		IV/III	Moderately weak to moderately strong, pinkish brown, highly to moderately decomposed MONZONITE.
				94	0	0	>20	9.57		9.57 T2101	-8.32	9.57		III	Moderately strong, pinkish brown to brownish grey spotted pink, moderately decomposed MONZONITE.
											-8.75	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 11.1.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.09.11

CHECKED EDWARD CHENG DATE 20.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-092**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,409.77 N 812,158.20	DATE from 17.09.11 to 19.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.25 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.09.11	13.50 HW	4.40m at 18:00		100	21	21	>20	10.43		T2101 10.10–10.91				III	Joints are closely to very closely spaced, rough planar, narrow, limonite, manganese, chlorite and kaolin stained, dipping at 20°-30°, 50°-60° and 80°-90°.
				100	72	68	10.9	11.62		T2101 10.91–12.14	-10.45	11.70			
				99	90	90	8.7	12.42		T2101 12.14–13.51				II	Strong, dark grey spotted white locally streaked brown, slightly decomposed fine ash TUFF. Joints are medium to closely locally widely spaced, rough planar, very narrow, chlorite and kaolin stained, dipping at 10°-20°, 40°-50° and 70°-80°.
				100	86	86	4.7	13.92		T2101 13.51–14.77					
							0.0	14.55							
				98	91	91	9.1	14.77		T2101 14.77–16.06	-14.81	16.06			
							3.4	15.96							
							20.0	16.06							End of drillhole at 16.06m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 19.09.11

CHECKED EDWARD CHENG DATE 20.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-036**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,404.36 N 812,156.93	DATE from 10.09.11 to 14.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.28 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.09.11	PW	Dry at 08:00									+0.89	0.39			Wash boring.
				100						0.39 T2101					Angular to subangular COBBLE sized rock fragments. (FILL)
				63						1.19 T2101					
										1.59	-0.31	1.59			Wash boring.
	5.00 PW HW			50						4.85 T2101	-3.57	4.85			Angular to subangular COBBLE sized rock fragments. (FILL)
										5.05	-3.77	5.05			Wash boring.
				97						7.17 T2101	-5.89	7.17			Angular to subangular COBBLE sized rock fragments. (FILL)
								7.56		7.56 T2101	-6.28	7.56			
				100	0	0	15.3			T2101				III	Moderately strong, grey to yellowish grey locally brown spotted black and white, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, narrow to moderately narrow, kaolin, manganese and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
								8.15		8.07 T2101					
		4.45m at 18:00		99	14	14	12.0			T2101					
10.09.11										8.78	-7.62	8.90			
12.09.11		3.67m at 08:00						8.90							
				99	92	92	2.7			T2101				II	Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar, very narrow, limonite, kaolin and chlorite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
				99	84	84				9.85 T2101	-8.72	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.09.11

CHECKED EDWARD CHENG DATE 15.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 16.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-036**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,404.36 N 812,156.93	DATE from 10.09.11 to 14.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.28 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							>20	10.03 10.27							As Sheet 1 of 2.
				99	84	84				T2101					
										11.19					
				100	90	79	11.1			T2101					
	12.50 HW									12.23				II	
				99	99	99				T2101					
		4.41m at 18:00						12.99		12.99					
12.09.11															
14.09.11		3.52m at 08:00		100	100	83	4.3			T2101					
14.09.11								13.92		13.92	-12.64	13.92			End of drillhole at 13.92m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.09.11

CHECKED EDWARD CHENG DATE 15.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 16.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-033**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,396.12 N 812,155.01	DATE from 07.09.11 to 09.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.27 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.09.11	PW	4.33m at 18:00		82						0.30	+0.97	0.30			Wash boring.
07.09.11									T2101						Brownish grey to grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
08.09.11		3.95m at 08:00		80					T2101	0.75					
				73					T2101	0.95					
				84					T2101	1.20					
				86					T2101	1.37					
										1.87	-0.60	1.87			Wash boring.
	4.50 PW														
	HW			21	0	0		5.76		5.40	-4.13	5.40			
									T2101		-4.49	5.76			Brownish grey to grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				91	0	0	>20		T2101	5.88				IV/III	Moderately weak to moderately strong, brownish grey to grey, highly to moderately decomposed fine ash TUFF.
				100	0	0			T2101	6.32	-5.05	6.32			
								6.62		6.50					Moderately strong, dark grey to brownish grey, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, narrow, manganese, limonite, kaolin and chlorite stained, dipping at 10°-20°, 30°-40° and 80°-90°.
				100	34	21	8.1		T2101					III	
							NI	7.73		7.85	-6.58	7.85			
							10.0	7.80							7.73- 7.80m: Highly fractured.
								8.10							Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, very narrow, chlorite manganese stained, dipping at 10°-20°, 60°-70° and 80°-90°.
		4.40m at 18:00		100	60	60									
08.09.11										8.85				II	
09.09.11		3.65m at 08:00					3.9								
				99	99	95			T2101						
	10.00 HW										-8.73	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 09.09.11

CHECKED EDWARD CHENG DATE 10.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 22.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-033**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,396.12 N 812,155.01	DATE from 07.09.11 to 09.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.27 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
09.09.11		4.30m at 18:00		99	99	95	3.9	10.89		T2101 10.31					As Sheet 1 of 2.
				99	74	70	5.0	11.69		T2101 11.69				II	
				100	94	94	6.3	13.12		T2101 13.12	-11.85	13.12			End of drillhole at 13.12m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 09.09.11	DATE 10.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 22.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-032**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,390.88 N 812,153.91	DATE from 05.09.11 to 07.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.26 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.09.11	PW									0.23	+1.03	0.23			Wash boring.
				100						T2101					Brownish grey to grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL)
		4.20m at 18:00		100						0.78 0.93 T2101					
05.09.11				100						1.28 T2101					
06.09.11		3.65m at 08:00		75						1.68	-0.42	1.68			
	4.60 PW														Wash boring.
	HW							5.63		5.63	-4.37	5.63			
				97	70	61	6.5			T2101				III	Moderately strong, dark grey to brownish grey, moderately decomposed fine to coarse ash TUFF. Joints are closely to medium spaced, rough planar, narrow to very narrow, limonite, kaolin and manganese stained, dipping at 10°-20° and 80°-90°.
								6.77			-5.51	6.77			
				77	0	0	NI			6.95 T2101	-5.99	7.25		IV	Weak to moderately weak, brownish grey, highly decomposed fine ash TUFF.
							NR	7.25 7.34		7.34	-6.08	7.34		V	
				100	75	75	11.1			T2101				II	7.25- 7.34m: No recovery assumed to be completely decomposed TUFF.
				98	57	57		8.15		7.74 T2101	-6.75	8.01		III	Strong, dark grey spotted black and white, slightly decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20°, 50°-60°, 70°-80° and 80°-90°.
				97	97	97	4.9			8.34 T2101	-7.89	9.15			8.01- 9.15m: Moderately decomposed TUFF.
	9.90 HW			99	99	99				9.09 T2101	-8.74	10.00		II	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 07.09.11

CHECKED EDWARD CHENG DATE 08.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 22.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-032**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,390.88 N 812,153.91	DATE from 05.09.11 to 07.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.26 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							4.9	10.19							As Sheet 1 of 2.
				99	99	99	5.7			T2101 10.53				II	
								10.89							
				100	96	96	4.8			T2101					
								11.72		11.76	-10.46	11.72		III	
							>20	11.96			-10.70	11.96			11.72- 11.96m: Moderately decomposed TUFF.
				100	18	15				T2101				II	
		4.27m at 18:00					3.6								
06.09.11															
07.09.11		3.82m at 08:00		100	93	93				T2101 13.18	-12.04	13.30		III	
07.09.11								13.61		13.61	-12.35	13.61			13.30- 13.61m: Moderately decomposed TUFF.
															End of drillhole at 13.61m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 07.09.11

CHECKED EDWARD CHENG DATE 08.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 22.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-031**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,382.46 N 812,151.85	DATE from 01.09.11 to 02.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.26 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.09.11	SW	Dry at 08:00		95						T2101 0.41	+0.85	0.41			Wash boring.
				97						T2101 0.80					Brownish grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				65						T2101 1.11					
				100						T2101 1.65					
										2.25	-0.99	2.25			
	4.50 SW														Wash boring.
	PW														
	5.80 PW									4.78	-3.52	4.78			
	HW										-3.75	5.01			Brownish grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				97	71	71	5.3	5.01		T2101	-4.02	5.28	IV/III		Moderately weak to moderately strong, brownish grey spotted black and white, highly to moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar, very narrow to narrow, manganese, limonite and kaolin stained, dipping at 10°-20° and 80°-90°.
							NA	5.20 5.28							
				99	99	99	3.0			5.91				II	Strong, dark grey locally brownish grey spotted black and white, fine ash TUFF. Joints are medium to closely spaced locally widely spaced, rough planar, very narrow to narrow, limonite, manganese and kaolin stained, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
								7.27		T2101	-6.01	7.27			
				100	54	43	7.5			7.27				III	7.27- 8.65m: Moderately strong and moderately deocmposed TUFF.
		4.20m at 18:00													
01.09.11								8.60							
02.09.11	9.00 HW	4.36m at 08:00					19.4	8.91		8.65	-7.39	8.65			
				100	83	73	4.0			T2101				II	
								9.66							
				100	100	90	7.4			9.80	-8.74	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 22.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.09.11

CHECKED EDWARD CHENG DATE 03.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-031**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,382.46 N 812,151.85	DATE from 01.09.11 to 02.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.26 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.09.11				100	100	90	7.4	11.02		T2101 11.02				II	As Sheet 1 of 2.
				100	76	76	4.2	12.20		T2101 12.20	-10.94	12.20			End of drillhole at 12.20m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.09.11

CHECKED EDWARD CHENG DATE 03.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 22.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-098**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,376.69 N 812,150.52	DATE from 30.08.11 to 31.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.21 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.08.11	SW	Dry at 08:00									+0.83	0.38			Wash boring.
				92	92	0				0.38 T2101 0.98					Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
											+0.23	0.98			Wash boring.
	4.50 SW						NI	4.42 4.50		4.42	-3.21	4.42			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	5.00 PW			78	54	39	12.3			T2101	-3.29	4.50		III	
	HW						NR	5.07			-3.86	5.07		V	Moderately weak, brownish grey to yellowish grey spotted black, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, narrow to moderately narrow, limonite, manganese and kaolin stained, dipping at 10°-20° and 40°-50°.
				100	100	88		5.35		5.35 T2101	-4.14	5.35			No recovery assumed to be completely decomposed TUFF.
	6.00 HW									5.78					
				97	88	88	4.6			T2101					Moderately strong, dark grey to greenish grey spotted black, moderately decomposed fine ash TUFF. Joints are medium locally widely spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20°, 20°-30°, 40°-50° and 80°-90°.
							>20	7.09 7.25		7.25					
				100	91	80	6.1			T2101				III	
		3.85m at 18:00						8.23							
30.08.11										8.57					
31.08.11		3.62m at 08:00					10.3	9.01		T2101					
				99	98	78	3.3								
								9.91		T2101 9.91	-8.79	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 11.1.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.08.11

CHECKED EDWARD CHENG DATE 01.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-098**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,376.69 N 812,150.52	DATE from 30.08.11 to 31.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.21 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	65	38	12.4				-9.14	10.35		III	As Sheet 1 of 2.
				100	65	38	12.4			T2101					Moderately strong, dark grey to greenish grey locally pinkish grey spotted black, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, very narrow to narrow, limonite and chlorite stained, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
							>20	10.88 11.10		11.04					
							13.9	11.46							
				100	81	81				T2101				III	
							9.5			12.14					
31.08.11				100	83	46				T2101					
								12.62		12.62	-11.41	12.62			End of drillhole at 12.62m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.08.11

CHECKED EDWARD CHENG DATE 01.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-101**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,365.82 N 812,147.91	DATE from 25.08.11 to 26.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.20 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.08.11	SW	Dry at 08:00									+0.77	0.43			Wash boring.
				89						0.43 T2101					Dark grey to black, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				89						0.88 T2101					
										1.33	-0.13	1.33			Wash boring.
										3.83	-2.63	3.83			
				79	0	0		4.06		T2101	-2.86	4.06			Dark grey to black, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	4.50 SW PW									4.31					Moderately weak to moderately strong, dark brown to brownish grey, highly to moderately decomposed fine ash TUFF.
		3.95m at 18:00		92	47	42	NI	5.14		T2101	-3.94	5.14		IV/III	
25.08.11										5.50	-4.45	5.65		III	Moderately strong, yellowish grey to dark grey spotted black, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow to very narrow, limonite, manganese and kaolin stained, dipping at 10°-20°, 20°-30° and 80°-90°.
26.08.11	5.85 PW HW	3.75m at 08:00		100	100	100	7.0			T2101					
				98	92	83		7.13		6.20 T2101					Strong, dark grey spotted and mottled pink, locally brownish grey, slightly deocmposed fine ash TUFF. Joints are closely to medium locally widely spaced, rough planar, very narrow to narrow, limonite, chlorite and kaolin stained, dipping at 10°-20°, 20°-30° and 80°-90°.
							2.9			7.55				II	
	8.60 HW			100	100	84		8.52		T2101					
							7.9			8.90					
				100	96	92				T2101					
							>20	9.66		9.66					
				98	61	37	14.3	9.81		T2101	-8.80	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 11.1.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.08.11

CHECKED EDWARD CHENG DATE 27.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-101**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,365.82 N 812,147.91	DATE from 25.08.11 to 26.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.20 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.08.11				98	61	37	14.3	10.51		T2101 10.20 T2101 10.51 T2101 11.33	-10.13	11.33		II	As Sheet 1 of 2. End of drillhole at 11.33m.
				100	81	81									
				100	100	100	7.3	11.33							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.08.11

CHECKED EDWARD CHENG DATE 27.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-029**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,360.63 N 812,146.68	DATE from 23.08.11 to 24.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
23.08.11	SW	Dry at 08:00									+0.75	0.42			Wash boring.
				88						T2101 0.42					Yellowish grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				100						T2101 0.82 0.95	+0.22	0.95			Wash boring.
								2.75		T2101 2.75	-1.58	2.75			
				96	51	51	NI	2.96		T2101	-1.79	2.96			Yellowish grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				100	75	75	9.7			T2101 3.20 3.40					Moderately strong, yellowish grey to dark grey spotted white, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow to very narrow, limonite, kaolin and manganese stained, dipping at 10°-20°, 20°-30°, 60°-70° and 80°-90°.
	4.50 SW							3.58							
	PW			98	98	98	6.9							III	
	5.15 PW							4.88		T2101 4.88					
	HW														
		4.07m at 18:00		98	92	92	7.6			T2101					
23.08.11								6.19		T2101 6.19					
24.08.11		3.75m at 08:00		99	99	99				T2101	-5.48	6.65			
							4.6			T2101 7.02					Strong, yellowish grey to dark grey spotted white, slightly decomposed fine ash TUFF.
	7.50 HW			100	91	91								II	
											-6.85	8.02			
							>20	8.14 8.26		T2101 8.40					Moderately strong, yellowish grey to dark grey spotted white, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, narrow to very narrow, limonite, kaolin and manganese stained, dipping at 10°-20°, 20°-30°, 60°-70° and 80°-90°.
				100	83	83	6.5			T2101				III	
							>20	9.34 9.56							
				100	100	100	12.3			T2101 9.66 9.76					
				100	78	65				T2101	-8.83	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 2503005.GDT 22.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.08.11

CHECKED EDWARD CHENG DATE 25.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-029**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,360.63 N 812,146.68	DATE from 23.08.11 to 24.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.08.11								10.13		T2101 10.13	-8.96	10.13			As Sheet 1 of 2. End of drillhole at 10.13m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.08.11

CHECKED EDWARD CHENG DATE 25.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 22.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-106**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,355.14 N 812,145.00	W.O. No.
MACHINE / No. DR09		DATE from 17.08.11 to 22.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.20 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
17.08.11	PW														Wash boring.
				86	0	0	5.7	0.84			0.48 +0.72	0.48			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
								1.18		T2116	+0.36	0.84		IV/III	Moderately weak to moderately strong, brownish grey to grey, highly to moderately decomposed fine ash TUFF. (Recovered as angular to subangular coarse GRAVEL and COBBLE sized rock fragments)
								1.30			1.18 +0.02	1.18		V	
				92	0	0	NI			T2101	1.30 -0.10	1.30		IV/III	
								2.06			2.06 -0.86	2.06			Wash boring, assumed to be completely decomposed TUFF.
								2.70			2.70 -1.50	2.70		V	Moderately weak to moderately strong, brownish grey to grey, highly to moderately decomposed fine ash TUFF. (Recovered as angular to subangular coarse GRAVEL and COBBLE sized rock fragments)
				98	40	40	NI			T2101				IV	
								3.15			3.15 -1.95	3.15			Wash boring, assumed to be completely decomposed TUFF.
								3.57			3.57 -2.37	3.57		V	Moderately weak, brownish grey to grey, highly decomposed fine ash TUFF. (Recovered as angular to subangular coarse GRAVEL and COBBLE sized rock fragments)
							NI								
				80	52	34	7.4	3.87		T2101				IV/III	Wash boring, assumed to be completely decomposed TUFF.
	4.50 PW HW							4.82			4.82 -3.62	4.82			Moderately strong to moderately weak, yellowish grey to grey, highly to moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, moderately narrow to narrow, limonite and manganese stained, dipping at 10°-20°.
								5.46			5.46 -4.26	5.46		V	
							NI	5.72			-4.51	5.71		IV	Wash boring, assumed to be completely decomposed TUFF.
	6.00 HW			99	67	41	9.3			T2101					Moderately weak, brownish grey to grey, highly deocmposed fine ash TUFF. (Recovered as COBBLE sized rock fragments)
		4.35m at 18:00					>20	6.47 6.61							Moderately strong, yellowish grey to dark grey spotted black and white, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, narrow to moderately narrow, limnite, manganese and kaolin stained, dipping at 10°-20°, 30°-40°, 60°-70° and 80°-90°.
17.08.11											6.96				
18.08.11		4.10m at 08:00		96	57	57	7.9			T2101				III	
								8.00			-6.80	8.00			
							NI	8.32			8.32			IV	Moderately weak to weak, yellowish grey to brownish grey, highly decomposed fine ash TUFF. (Recovered as COBBLE sized rock fragments)
				97	57	30	>20	8.53		T2101	-7.33	8.53			Moderately strong, yellowish grey to dark grey spotted black and white, moderately decomposed fine ash TUFF. Joints are closely locally medium spaced, smooth planar, very narrow, limonite, manganese and kaolin stained, dipping at 10°-20°, 30°-40° and 60°-70°.
				100	85	85	6.5			T2101	8.99				
				100	83	68	18.6	9.76		T2101	9.46			III	
											-8.80	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.08.11

CHECKED EDWARD CHENG DATE 24.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-106**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,355.14 N 812,145.00	DATE from 17.08.11 to 22.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.20 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							18.6	10.19			-9.01	10.21		III	As Sheet 1 of 2.
18.08.11		4.20m at 18:00		100	83	68	3.4			T2101					Strong, dark grey spotted and mottled pink, slightly decomposed TUFF. Joints are medium locally closely and widely spaced, rough planar, very narrow, limonite locally kaolin stained, dipping at 10°-20°, 40°-50°, 70°-80° and 80°-90°.
20.08.11		4.12m at 08:00		100	88	88		10.86		T2101					
				99	99	99		11.37		T2101					
20.08.11		4.25m at 18:00		100	100	100	1.9	12.39		T2101					
22.08.11		4.12m at 08:00		100	99	93		13.04		T2101				II	
				99	89	89	8.5	13.43		T2101					
				97	97	97	1.8	13.90		T2101					
22.08.11		4.20m at 18:00		98	79	79	4.8	14.93		T2101					
								16.12		T2101	-15.34	16.54			End of drillhole at 16.54m.
								16.54							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.08.11

CHECKED EDWARD CHENG DATE 24.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-028**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,349.63 N 812,144.05	DATE from 15.08.11 to 16.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.21 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.08.11	PW	Dry at 08:00													Wash boring.
				95						0.53 T2116 0.93	+0.68 +0.28	0.53 0.93			Yellowish grey to brownish grey and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
															Wash boring.
				100				3.47		3.16 T2101	-1.95	3.16			Yellowish grey to brownish grey and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
							NI	3.64		3.47 T2101	-2.26	3.47		IV/III	Moderately weak to weak, brownish grey to brown, highly to moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, narrow to moderately narrow, rough planar to undulating, manganese, kaolin and limonite stained, dipping at 10°-20°, 20°-30° and 40°-50°.
				98	65	49	6.4								
	5.00 PW						>20	4.74 4.85		4.74	-3.53 -3.64	4.74 4.85		IV IV/III	4.74- 4.85m: Highly decomposed TUFF.
	HW						3.8	5.11			-3.90	5.11		IV	
							>20	5.21			-4.00	5.21		IV/III	5.11- 5.21m: Highly decomposed TUFF.
				100	74	74									
							8.3				-4.48 -4.62	5.69 5.83		IV IV/III	5.69- 5.83m: Highly decomposed TUFF.
								6.42		6.09	-5.21	6.42			Strong, dark grey spotted occasional streaked white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, very narrow, rough planar, limonite, kaolin and occasional manganese stained, dipping at 10°-20°, 40°-50°, 60°-70° and 80°-90°.
				97	83	83	5.3								
								7.18		7.18 T2101					
				100	72	48				7.47 T2101					
				100	90	90				7.78 T2101					
				100	86	86	6.9								
	8.50 HW									8.35 T2101				II	
		3.95m at 18:00		100	96	96		8.77							
15.08.11										9.31 T2101					
16.08.11		4.00m at 08:00		100	100	100	4.2				-8.79	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503005.GDT 8.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.08.11

CHECKED EDWARD CHENG DATE 17.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-028**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,349.63 N 812,144.05	DATE from 15.08.11 to 16.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.21 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	100	4.2	10.21		T2101 10.22					As Sheet 1 of 2.
				100	63	53	10.9			T2101 10.62					
				100	94	48		11.31		T2101 11.31					
				100	94	65	9.6	12.56		T2101 12.78				II	
				100	91	91	4.5			T2101 14.01					
16.08.11				100	100	91		14.56		T2101 14.56	-13.35	14.56			End of drillhole at 14.56m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.08.11

CHECKED EDWARD CHENG DATE 17.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 8.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-027**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,341.44 N 812,142.08	JOB No. J1105S06
MACHINE / No. DR09		DATE from 11.08.11 to 12.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.? Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.08.11	PW	Dry at 08:00		100						T2101 0.45	+0.72	0.45			Wash boring.
	1.20 PW									T2101 0.85	+0.32	0.85			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock, concrete and wood fragments. (FILL)
	1.65 HW			88						T2101 1.05	+0.12	1.05			Wash boring.
					38	0		1.52		T2101 1.65	-0.35	1.52			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock, concrete and wood fragments. (FILL)
		4.36m at 18:00		98	86	68	9.2			T2101 2.28					Moderately strong, brownish grey to dark grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to medium locally very closely spaced, rough planar to undulating, narrow to very narrow locally moderately narrow, limonite locally kaolin stained, dipping at 10°-20° and 80°-90°.
11.08.11 12.08.11		3.14m at 08:00		100	100	100	5.6	2.28		T2101 2.85					
				99	99	99	8.1	3.18		T2101 3.60					
				100	90	78	4.8	3.92		T2101 5.04					
				100	95	87				T2101 5.87				III	
				100	90	75	>20	6.44 6.67		T2101 7.32					
							9.2	7.32		T2101 8.67					
				100	100	100	4.4			T2101					
				100	76	72	16.3	9.57			-8.83	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 2503005.GDT 12.9.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.08.11

CHECKED EDWARD CHENG DATE 13.08.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-027**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,341.44 N 812,142.08	DATE from 11.08.11 to 12.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.06		10.06 T2101					As Sheet 1 of 2.
12.08.11				100	100	56	9.3	10.60		10.60	-9.43	10.60		III	End of drillhole at 10.60m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.08.11

CHECKED EDWARD CHENG DATE 13.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 12.9.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-026**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,336.02 N 812,140.90	DATE from 07.09.11 to 08.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.18 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.09.11	HW			88						T2101 0.20–0.60	+0.98 +0.58	0.20 0.60			Wash boring. Black and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL) Wash boring.
	2.98 HW			75	0	0	NI	2.78 2.98		T2101 2.78–2.98	-1.60 -1.80	2.78 2.98		IV/III	Moderately weak to moderately strong, brownish grey to grey, highly to moderately decomposed fine ash TUFF.
				100	81	71	7.9	4.88		T2101 2.98–4.48					Moderately strong, brownish grey to yellowish grey, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, narrow to very narrow, limonite, manganese and kaolin stained, dipping at 20°-30°, 60°-70° and 80°-90°.
				98	77	74				T2101 4.48–6.00					
				99	93	93	3.8			T2101 6.00–7.51				III	
				99	91	91	8.3	8.28 8.88		T2101 7.51–9.02					
07.09.11 08.09.11				100	45	45	14.3			T2101 9.02–9.73					
08.09.11							>20	9.65 9.73			-8.55	9.73			End of drillhole at 9.73m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 15.9.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.09.11

CHECKED EDWARD CHENG DATE 09.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-112**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,326.27 N 812,138.59	DATE from 05.09.11 to 06.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.09.11	HW	Dry at 08:00									+0.50	0.67			Wash boring.
				88	88	0	>20	0.67		T2101 0.67–1.12	+0.05	1.12		III	Moderately strong, grey, moderately decomposed fine ash TUFF. (CORESTONE)
								1.12			-0.09	1.26		V	Wash boring, assumed to be completely decomposed TUFF.
								1.26							Moderately strong, light grey to grey, moderately decomposed fine ash TUFF with closely spaced joints.
				98	98	28	10.2			T2101 1.26–2.73				III	
								3.00			-1.83	3.00			
	3.70 HW			100	38	30	NI			T2101 2.73–3.70				IV	Weak, light grey to grey, highly decomposed fine ash TUFF. (Sandy SILT with some gravel sized rock fragments)
								3.70			-2.53	3.70			
				100	100	80				T2101 3.70–4.53				III	Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, iron stained, dipping at 10°-20°, 30°-40° and 50°-60°.
				100	100	100	3.0			T2101 4.53–5.74	-3.36	4.53			3.70- 4.53m: Moderately decomposed TUFF.
		Dry at 18:00		93	93	93				T2101 5.74–6.18					
05.09.11															
06.09.11		4.35m at 08:00		100	100	100				T2101 6.18–6.73					
								6.73						II	
				100	100	83				T2101 6.73–8.17					
				100	100	100	3.1			T2101 8.17–8.65					
				100	100	85				T2101 8.65–9.78	-8.13	9.30			
											-8.61	9.78		III	9.30- 9.78m: Moderately decomposed TUFF.
				100	100	100				T2101 9.78–	-8.83	10.00		II	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.09.11

CHECKED EDWARD CHENG DATE 07.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-112**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,326.27 N 812,138.59	DATE from 05.09.11 to 06.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
06.09.11		4.05m at 18:00		100	100	100	3.1	10.40		T2101 10.40	-9.23	10.40		II	As Sheet 1 of 2. End of drillhole at 10.40m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 06.09.11

CHECKED EDWARD CHENG DATE 07.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 11.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-114**

SHEET 1 of 1

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR06	E 835,315.49 N 812,136.01	DATE from 02.09.11 to 03.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.09.11	HW	Dry at 08:00		60						T2101 0.30–0.80	+0.85	0.30			Wash boring.
											+0.35	0.80			Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	1.52 HW														Wash boring.
				75	0	0	NI	1.52		T2101 1.52–1.72	-0.37	1.52		IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed fine ash TUFF.
								1.72			-0.57	1.72			Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar and undulating, very narrow, kaolin, limonite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
				100	100	76				T2101 1.72–2.74					
				99	99	85	6.4			T2101 2.74–3.98					
				100	67	67				T2101 3.98–4.76					
				100	65	65		5.30		T2101 4.76–5.68				II	
							18.4	5.68							
				100	100	82				T2101 5.68–6.41					
							4.7								
		3.20m at 18:00		100	100	100				T2101 6.41–7.39					
02.09.11								7.39							
03.09.11		3.50m at 08:00		99	99	97	6.8			T2101 7.39–8.27					
03.09.11								8.27			-7.12	8.27			End of drillhole at 8.27m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.09.11

CHECKED EDWARD CHENG DATE 05.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 8.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. PD/NRW-023

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR20	E 835,639.61 N 812,177.03	DATE from 19.08.11 to 22.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.08.11	PW	Dry at 08:00		83						T2101 0.00–1.20					Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				68						T2101 1.20–1.70					
				26						T2101 1.70–2.40	+4.99	2.40			
	3.10 PW														Wash boring.
	HW										+4.29	3.10			
				26						T2101 3.10–4.00					Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
											+3.39	4.00			Wash boring.
							10.5	6.63		6.63	+0.76	6.63			
				100	48	33		7.20		T2101				III	Moderately strong, brownish grey, moderately decomposed coarse ash TUFF. Joints are closely to very closely spaced, rough planar, narrow, limonite and locally kaolin stained, dipping at 10°-20°, 20°-30° and 80°-90°.
							8.5			7.83					
		2.88m at 18:00		62	29	29		8.26		T2101					
19.08.11							>20				-1.29	8.68			
20.08.11		3.07m at 08:00						8.68		8.68				V	Wash boring, assumed to be completely decomposed TUFF.
											-2.61	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.08.11

CHECKED EDWARD CHENG DATE 23.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-023**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR20	E 835,639.61 N 812,177.03	DATE from 19.08.11 to 22.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.7 Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
														V	As Sheet 1 of 2.
	10.98 HW			100	0	0	NI	10.98 11.18		T2101 10.98 11.18	-3.59 -3.79	10.98 11.18		IV/III	Moderately weak to moderately strong, dark grey to light grey with spotted black and white, highly to moderately decomposed coarse ash TUFF.
				100	82	53	12.2	11.67		T2101 11.84					Moderately strong to strong, dark grey to brownish grey, moderately to slightly decomposed coarse ash TUFF. Joints are medium to closely spaced, rough planar, narrow to very narrow, limonite and manganese stained, dipping at 10°-20°, 40°-50° and 60°-70°.
							>20	12.09							
				100	82	63	9.2			T2101 13.18				III/II	
				100	94	63	>20	14.04 14.14		T2101					
											-7.03	14.42			Strong, dark grey spotted black, slightly decomposed coarse ash TUFF. Joints are medium to widely locally closely spaced, rough planar, very narrow, limonite, chlorite and locally kaolin stained, dipping at 10°-20° and 30°-40°.
				100	100	100	3.1			T2101 14.62 15.51					
20.08.11		2.92m at 18:00		100	100	91				T2101					
22.08.11		3.00m at 08:00								16.49					
				99	99	65	9.3	17.05		T2101				II	
							>20	18.02 18.17		18.02					
				100	89	89	3.0			T2101					
22.08.11		2.65m at 18:00						19.50		19.50	-12.11	19.50			End of drillhole at 19.50m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.08.11

CHECKED EDWARD CHENG DATE 23.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-026**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,647.41 N 812,177.22	DATE from 27.08.11 to 30.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.49 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	P.L./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
27.08.11	PW	Dry at 08:00													Wash boring.
	2.10 PW														
	HW	Dry at 18:00		65						T2101 2.10	+5.39	2.10			Brown and black, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
27.08.11 29.08.11		4.00m at 08:00		63						T2101 2.70					
										3.40	+4.09	3.40			Wash boring.
											-2.51	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.08.11

CHECKED EDWARD CHENG DATE 01.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-026**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,647.41 N 812,177.22	DATE from 27.08.11 to 30.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.49 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.? Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 3.
	13.54 HW														
				100	0	0	>20	13.54		T2101	13.54 -6.05	13.54		IV/III	Moderately weak to moderately strong, brownish grey spotted pink, highly to moderately decomposed coarse ash TUFF.
								13.84			13.84 -6.35	13.84		III	
				100	100	83	9.6			T2101					Moderately strong, brownish grey spotted white and pink, moderately decomposed coarse ash TUFF. Joints are very closely to closely spaced, rough planar to undulating, limonite and manganese stained, dipping at 10°-20° and 30°-40°.
								15.41			15.26				
				100	100	100	6.0			T2101					Strong, dark grey spotted black and pink, slightly decomposed coarse ash TUFF. Joints are closely to very closely spaced, rough planar, very narrow, kaolin, limonite and chlorite stained, dipping at 10°-20°, 30°-40°, 50°-60° and 80°-90°.
		4.00m at 18:00					11.9	16.25						II	
29.08.11								16.67			16.67				
30.08.11		4.20m at 08:00					>20	16.94							
				100	53	53	2.1			T2101					
							15.9	17.41							
								18.04			18.04				
				99	62	55	9.4			T2101					
		4.15m at 18:00					>20	18.69							
30.08.11				100	0	0		19.26		T2101	19.08 -11.59 19.26 -11.77	19.08 19.26		III	Moderately strong, brownish grey spotted white and pink, moderately decomposed coarse ash TUFF. Joints are very closely to closely spaced, rough planar to undulating, limonite and manganese stained, dipping at 10°-20° and 40°-50°.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.08.11

CHECKED EDWARD CHENG DATE 01.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-026**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,647.41 N 812,177.22	W.O. No.
MACHINE / No. DR10		DATE from 27.08.11 to 30.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.49 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															End of drillhole at 19.26m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.08.11

CHECKED EDWARD CHENG DATE 01.09.11

REMARKS

DRILLHOLE LOG J1105S05 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-030**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,630.60 N 812,177.21	DATE from 25.08.11 to 29.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.27 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.08.11	PW	Dry at 08:00									+6.62	0.65			Wash boring.
				43						0.65 T2116 1.80					Dark grey to brownish grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL)
				76						T2116 2.30					
		Dry at 18:00		79						T2116 3.00					
25.08.11										T2116 3.50					
26.08.11		Dry at 08:00		80						T2116 4.05					
				87						T2116 4.60					
				73						T2116 5.50					
				77						T2116 5.95					
		5.47m at 18:00		82											
26.08.11	5.95 PW														
27.08.11	HW	Dry at 08:00		48						7.20	+0.07	7.20			Wash boring.
				84						T2101 8.42 9.00	-1.15 -1.73	8.42 9.00			Dark grey to brownish grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL) Wash boring.
											-2.73	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.08.11

CHECKED EDWARD CHENG DATE 30.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-030**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,630.60 N 812,177.21	DATE from 25.08.11 to 29.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.27 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
	11.56 HW										-4.29	11.56			
											-4.53	11.80		IV	Moderately weak, pale grey to yellowish grey, highly decomposed coarse ash TUFF.
				98	63	40	15.4	11.80		T2101					Strong, dark grey spotted black and white locally pink, slightly deocmposed corse ash TUFF. Joints are closely to very closely locally medium spaced, rough planar, very narrow to narrow, kaolin, limonite and manganese stained, dipping at 10°-20°, 20°-30°, 60°-70° and 80°-90°.
								12.71			12.71				
				100	96	96				T2101					
							6.7				13.99				
		5.16m at 18:00		100	99	81				T2101					
27.08.11								15.39			15.39				
29.08.11		4.18m at 08:00					>20							II	
				100	62	57		15.89		T2101					
							11.1								
								16.52			16.52				
				100	100	90	8.3			T2101					
								17.48			17.48				
				99	99	83				T2101					
							5.1								
											18.89				
		4.77m at 18:00		100	100	100				T2101					
29.08.11								19.65			19.65				End of drillhole at 19.65m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.08.11

CHECKED EDWARD CHENG DATE 30.08.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-033**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,620.87 N 812,175.85	DATE from 30.08.11 to 01.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.27 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.7 Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.08.11	PW	Dry at 08:00		53						T2116 0.00					Brownish grey to dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock, concrete and occasional wood fragments. (FILL)
				85						1.10					
										T2116 2.60					
				56						T2116 3.30					
				56						T2116 4.35					
				67						T2116 5.10					
				50						T2116 6.20	+1.07	6.20			
30.08.11	7.00 PW	5.30m at 18:00													Wash boring.
31.08.11	HW	4.86m at 08:00									-2.73	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.09.11

CHECKED EDWARD CHENG DATE 02.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-033**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,620.87 N 812,175.85	DATE from 30.08.11 to 01.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.27 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
	11.13 HW						NI	11.13		11.13	-3.86	11.13		IV	Moderately weak, yellowish grey, highly decomposed coarse ash TUFF.
								11.27			-4.00	11.27			
							12.8								Moderately strong, brownish grey to pale grey with spotted black and white, moderately decomposed coarse ash TUFF. Joints are closely to very closely spaced, rough planar, very narrow to narrow, manganese, limonite and chlorite stained, dipping at 20-30°, 40°-50° and 80°-90°.
				99	61	55		11.66		T2101					
							6.9								
				100	66	66				T2101					
							>20	13.10							
								13.39							
				97	81	59				T2101				III	
				100	95	80	9.0			T2101					
				96	86	46				T2101					
							>20	15.60							
								15.71							
											-8.65	15.92			Strong, dark grey spotted black and white, locally pink, slightly decomposed coarse ash TUFF. Joints are medium to closely spaced, rough planar, very narrow, chlorite, kaolin locally limonite stained, dipping at 80°-90°.
				100	100	100				T2101					
							3.3								
		5.26m at 18:00		100	100	100				T2101					
31.08.11															
01.09.11		5.41m at 08:00		100	61	61	7.3	17.84		T2101				II	
								18.66							
		5.30m at 18:00		100	89	78	5.6			T2101					
01.09.11								19.56			-12.29	19.56			End of drillhole at 19.56m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.09.11

CHECKED EDWARD CHENG DATE 02.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-035A**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR02	E 835,613.37 N 812,174.67	DATE from 26.08.11 to 29.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.24 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.08.11	PW														Wash boring.
				60						0.45	+6.79	0.45			Yellowish brown and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
										T2101					
										0.95	+6.29	0.95			Wash boring.
	1.35 PW									1.35	+5.89	1.35			Yellowish brown and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
	HW			80						T2101					
										1.85	+5.39	1.85			Wash boring.
										2.40	+4.84	2.40			Yellowish brown and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				77						T2101					
										3.50	+3.74	3.50			Wash boring.
										4.45	+2.79	4.45			Yellowish brown and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
				84						T2101					
26.08.11										5.50	+1.74	5.50			
27.08.11															Wash boring.
										6.70	+0.54	6.70			
				90						T2101					Yellowish brown and dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
										7.20	+0.04	7.20			Wash boring.
	9.61 HW														
				100	0	0	15.3	9.61		9.61	-2.37	9.61		III	Moderately strong, brownish grey to yellowish grey, moderately decomposed corse ash TUFF. Joints are
										T2101 T2101					
										9.91	-2.76	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.08.11

CHECKED EDWARD CHENG DATE 30.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-035A**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR02	E 835,613.37 N 812,174.67	DATE from 26.08.11 to 29.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.24 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	68	52	15.3								closely to very closely spaced, rough planar, narrow to very narrow, limonite and manganese stained, dipping at 20°-30°, 50°-60°, 60°-70° and 80°-90°.
				100	68	52		10.46		T2101					
							12.5							III	
				100	87	82				11.18					
27.08.11										T2101					
29.08.11							>20	11.98 12.05		11.98	-4.81	12.05			
				100	100	94	7.7			T2101					Strong, dark grey to pinkish grey, slightly decomposed coarse ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite, manganese and chlorite stained, dipping at 10°-20°, 40°-50°, 60°-70° and 80°-90°.
								12.83		12.83					
				100	79	40	12.6			T2101					
								13.86							
							>20	14.15		14.15					
							16.7			T2101					
								14.57							
				98	90	85	9.3			T2101					
								15.11							
										15.58					
							9.7			T2101				II	
				100	86	67									
								16.86		16.86					
				100	63	63	9.9			T2101					
								18.28		18.28					
				98	98	98	5.7			T2101					
29.08.11								19.51		19.51	-12.27	19.51			End of drillhole at 19.51m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.08.11

CHECKED EDWARD CHENG DATE 30.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-038**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR08	E 835,595.85 N 812,172.90	DATE from 15.08.11 to 17.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.31 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.08.11	PW	Dry at 08:00													Wash boring.
				55						T2101 2.10–2.30	+5.21 +5.01	2.10 2.30			Yellowish grey to brownish grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL)
															Wash boring.
				72						T2101 3.00–3.55	+4.31	3.00			Yellowish grey to brownish grey, angular to subangular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL)
	4.00 PW HW			80						T2101 3.55–4.05	+3.26	4.05			Wash boring.
15.08.11		4.20m at 18:00													
16.08.11		4.10m at 08:00													
											-2.69	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 17.08.11	DATE 18.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-038**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR08	E 835,595.85 N 812,172.90	DATE from 15.08.11 to 17.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.31 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 3.
				82				11.64		T2101 11.53	-4.22	11.53		IV/III	Moderately weak to moderately strong, brownish grey and white, highly to moderately decomposed MONZONITE.
							7.1			11.64	-4.33	11.64			
				97	89	82	NI	12.20 12.35		T2101					Moderately strong to strong, dark grey, moderately to slightly decomposed MONZONITE. Joints are medium to closely locally very closely spaced, rough planar, very narrow locally narrow, manganese and limonite stained, dipping at 10°-20° and 30°-40°.
	12.90 HW						3.3			12.90				III/II	
				100	84	60	12.0	13.26 13.85		T2101	-6.54	13.85			
				100	60	60	11.6			14.19 T2101 14.64				III	Moderately strong, locally moderately weak, pinkish brown to grey spotted black, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, narrow, manganese and limonite stained, dipping at 60°-70° and 80°-90°.
								14.97			-7.66	14.97			
				100	100	66				T2101	-8.39	15.70		III	Moderately strong, dark grey mottled pink and spotted black, moderately decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, manganese, limonite and locally kaolin stained, dipping at 10°-20° and 80°-90°
							7.5			16.10					Strong, dark grey mottled pink and spotted black, slightly decomposed MONZONITE. Joints are closely to widely spaced, rough planar to rough undulating, very narrow, limonite and locally kaolin stained, dipping at 10°-20°, 30-40° and 80°-90°
		4.20m at 18:00		99	99	90				T2101					
16.08.11								17.62							
17.08.11		5.10m at 08:00								17.62				II	
				100	100	100				T2101					
							1.7			19.04					
				100	100	100				T2101	-12.69	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 17.08.11

CHECKED EDWARD CHENG DATE 18.08.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-038**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR08	E 835,595.85 N 812,172.90	DATE from 15.08.11 to 17.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.31 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.7 Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
17.08.11		4.80m at 18:00		100	100	100	1.7			T2101 20.54			× × × × × × × × × ×	II	As Sheet 2 of 3.
				100	100	94		21.18		T2101 21.18	-13.87	21.18			End of drillhole at 21.18m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 17.08.11

CHECKED EDWARD CHENG DATE 18.08.11

REMARKS

DRILLHOLE LOG J1105306 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-091**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,410.13 N 812,166.58	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	PW	Dry at 08:00									+0.77	0.39			Wash boring.
				78						0.39 T2118 0.99					Dark grey to brownish grey, coarse GRAVEL, COBBLE and BOULDER sized rock and wood fragments. (FILL)
	1.50 PW HW			67						T2116 1.29					
				41						T2116 2.62	-1.46	2.62			Wash boring.
				87	54	54				5.61 T2101 6.07	-4.45	5.61			Dark grey to brownish grey, coarse GRAVEL, COBBLE and BOULDER sized rock and wood fragments. (FILL)
				100	83	83				T2101 6.87	-4.66	5.82	× × × × × × × ×	II	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to closely spaced, rough planar, narrow to very narrow, manganese and limonite stained, dipping at 30°-40° and 40°-50°.
		1.38m									-5.71	6.87		V	Wash boring, assumed to be completely decomposed MONZONITE.
											-8.84	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-091**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,410.13 N 812,166.58	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	10.33 HW	at 18:00						10.33			-9.17	10.33		V	As Sheet 1 of 2.
25.10.11		1.12m at 08:00		82	0	0	NI	10.57		T2101 10.33			× ×	IV/III	Moderately weak to moderately strong, dark grey to brownish grey, highly to moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar, narrow, manganese and limonite stained, dipping at 10°-20° and 50°-60°.
							15.4	10.96			-9.80	10.96			
							NR	11.10		T2101 11.10	-9.94	11.10		V	No recovery assumed to be completely decomposed MONZONITE.
				100	31	31	9.3			T2101 11.52			× ×	III	Moderately strong, dark grey to yellowish grey spotted black and pink, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20°, 30°-40° and 80°-90° at 11.20-11.46m and 11.52-11.81m.
				94	34	34		11.96		T2101					
							5.0			12.40	-11.24	12.40		II	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to closely spaced, smooth planar locally rough undulating, limonite and chlorite locally kaolin stained, dipping at 10°-20° and 40°-50°.
				89	85	69	>20	13.35 13.47		T2101	-12.19 -12.31	13.35 13.47		III	13.35- 13.47m: Moderately strong and moderately decomposed MONZONITE.
							8.8	14.15		13.84					
				100	87	87				T2101					
							3.3			14.84					
				99	99	99		15.38		T2101				II	
							0.9			16.29					
				100	98	98				T2101					
25.10.11		0.58m at 18:00						17.57		17.57	-16.41	17.57			End of drillhole at 17.57m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1103S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-094**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,398.76 N 812,164.46	DATE from 20.10.11 to 22.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.10.11	PW	Dry at 08:00		60							+0.80	0.33			Wash boring.
										T2101 0.33					Dark grey to brown, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
				97						T2101 0.53					
	1.50 PW									1.39	-0.26	1.39			Wash boring.
	HW														
20.10.11		0.53m at 18:00													
21.10.11		0.83m at 08:00													
	10.00 HW							9.89		T2101 9.69	-8.76 -8.87	9.89 10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.10.11

CHECKED EDWARD CHENG DATE 24.10.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_2503200S.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-094**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,398.76 N 812,164.46	DATE from 20.10.11 to 22.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.13 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				98	42	42	NI	9.99			-8.86	9.99		IV/III	Moderately weak to moderately strong, brownish grey spotted pink, highly to moderately decomposed MONZONITE.
							13.6	10.21							
				88	42	42	6.8			T2101					
							>20	10.80 10.95		10.80					
				100	100	73				T2101					Moderately strong, yellowish grey mottled pink and spotted black and white, moderately deocmposed MONZONITE. Joints are closely spaced, rough planar and undulating, narrow to very narrow, chlorite, limonite, manganese and occasional kaolin stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							5.5			11.57				III	
		0.76m at 18:00													
21.10.11															
22.10.11		1.25m at 08:00		100	84	82				T2101					
							>20	12.41 12.74							
											-11.61	12.74			Strong, dark grey mottled pink and spotted black and white, slightly decomposed MONZONITE. Joints are medium to closely spaced, rough planar, very narrow, chlorite and calcite stained, dipping at 10°-20°, 70°-80° and 80°-90°.
										13.05					
				100	93	87	4.1			T2101				II	
										14.48					
				99	73	73				T2101					
							>20	15.15 15.29		15.15	-14.02 -14.16	15.15 15.29		III	Moderately strong, greenish grey spotted pink, moderately decomposed MONZONITE, highly fractured.
				97	33	33	11.9			T2101					
								15.88		15.88				II	Strong, dark grey mottled pink and spotted black and white, slightly decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, limonite stained, dipping at 10°-20°, 30°-40° and 80°-90°.
		0.53m at 18:00		100	21	21	11.0			T2101	-15.15	16.28		III	Moderately strong, dark grey to greenish grey spotted and mottled pink, moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar, very narrow, chlorite occasional kaolin stained, dipping at 10°-20°, 30°-40° and 80°-90°.
22.10.11								16.88		16.88	-15.75	16.88			End of drillhole at 16.88m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 22.10.11

CHECKED EDWARD CHENG DATE 24.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-094A**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,387.13 N 812,161.81	DATE from 19.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.12 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.10.11	HW	Dry at 08:00		60						0.35 T2116 0.55 T2116 0.83 T2116 1.16	+0.77	0.35			Wash boring.
				98											Dark grey to brown, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
				97							-0.04	1.16			Wash boring.
	8.11 HW							8.11		8.11 T2101	-6.99	8.11		IV/III	Moderately weak to moderately strong, brown to yellowish brown, highly to moderately decomposed MONZONITE.
				85	42	24	NI	8.35			-7.23	8.35			Moderately strong, greenish grey spotted black, moderately decomposed MONZONITE. Joints are closely to closely spaced, rough planar, dipping at 10°-20°, 50°-60° and 80°-90°.
							13.3								
							>20	8.95 9.04		8.95 T2101				III	
				97	69	37	11.3								
							>20	9.56 9.81		9.81 T2101	-8.54	9.66			
				100	96	96	4.6				-8.64	9.76			9.66- 9.76m: Moderately weak to moderately strong.
											-8.88	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-094A**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,387.13 N 812,161.81	DATE from 19.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.12 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.7 Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	96	96	4.6	11.12		T2101 11.26					brown, highly decomposed MONZONITE, highly fractured with extremely closely spaced joints.
				100	100	86	6.6	12.18		T2101 11.96				III	
				100	53	53	5.6	12.89		T2101 13.35					
							3.0	13.55							
				100	76	76	7.1	14.25		T2101 14.73	-12.73	13.85			
19.10.11		0.75m at 18:00		100	95	95	3.0			T2101 16.17				II	Strong, dark grey to yellowish grey streaked white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, rough planar to undulating, very narrow, limonite stained, dipping at 10°-20°, 40°-50° and 60°-70°.
20.10.11		0.63m at 08:00		100	86	53	12.9	16.56		T2101 16.87	-15.75	16.87			
20.10.11								16.87							End of drillhole at 16.87m.

DRILLHOLE LOG J1106S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-097**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,375.63 N 812,158.66	W.O. No.
MACHINE / No. DR05		DATE from 27.10.11 to 29.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.7 Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
27.10.11	HW	Dry at 08:00		59					T2101	0.30	+0.87	0.30			Wash boring.
				100					T2101	1.15					Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
										1.45	-0.28	1.45			Wash boring.
27.10.11	5.52 HW	1.21m at 18:00													
28.10.11		1.23m at 08:00	97	97	97	3.7		5.52	T2101	5.52	-4.35	5.52			
			99	65	35	9.2		6.06	T2101	5.81				III	Moderately strong, yellowish grey to yellowish brown, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, manganese, limonite and kaolin stained, dipping at 10°-20°, 30°-40° and 50°-60°.
			100	45	45	6.6		6.71	T2101	6.62	-5.54	6.71			
									T2101	7.38					Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are medium to closely spaced, smooth planar, very narrow, limonite, calcite and kaolin stained, dipping at 50°-60°, 60°-70° and 80°-90°.
			100	61	61	7.5		7.93	T2101	8.62				II	
			100	63	36	19.6		9.27	T2101	9.95	-8.83	10.00			
						1.8		9.73							

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.10.11

CHECKED EDWARD CHENG DATE 31.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-097**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,375.63 N 812,158.66	DATE from 27.10.11 to 29.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.17 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							1.8	10.30		T2101					As Sheet 1 of 2.
				100	83	81	>20	10.47		T2101					
							8.2								
								11.08		T2101 11.08				II	
28.10.11		0.92m at 18:00		100	26	19	7.3			T2101 11.76					
29.10.11		1.15m at 08:00		100	100	100				T2101 12.18	-11.01	12.18			
29.10.11								12.18							End of drillhole at 12.18m.

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.10.11

CHECKED EDWARD CHENG DATE 31.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-100**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,364.01 N 812,155.36	DATE from 18.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18.10.11	0.45 HW	Dry at 08:00		37						0.45 T2101 1.20	+0.71	0.45			Wash boring.
				36						T2101 2.30	-1.14	2.30			Dark grey to brown, coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
18.10.11		0.00m at 18:00													
19.10.11		0.00m at 08:00													Wash boring.
							NI	4.85		4.85 T2101 5.75	-3.69	4.85		III	Moderately strong, brownish grey, moderately decomposed fine ash TUFF, highly fracture with closely to very closely spaced joints.
				100	50	34	12.3	5.18			-4.02	5.18			Moderately strong, yellowish grey spotted black and grey, moderately decomposed fine ash TUFF. Joints are closely to medium spaced, narrow to moderately narrow, limonite, manganese locally kaolin stained, dipping at 10°-20° and 80°-90°.
				97	87	82	4.0	5.75		T2101 7.32				III	
				88	81	77	6.1	8.00		T2101 8.43					
				97	92	87	>20	8.99 9.17		T2101 9.95	-8.79	9.95			
							6.2								

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-100**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,364.01 N 812,155.36	DATE from 18.10.11 to 20.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
19.10.11							6.2	10.30		T2101				II	Strong, dark grey streaked white, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 10°-20°, 40°-50° and 80°-90°.
20.10.11		0.00m at 18:00		99	94	92	2.0	10.81		T2101					
							10.4	11.29		11.29					
		0.00m at 08:00		100	87	87	5.3			T2101				II	
20.10.11		0.00m at 18:00		100	95	95		13.75		12.68 T2101 13.75	-12.59	13.75			End of drillhole at 13.75m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 20.10.11

CHECKED EDWARD CHENG DATE 21.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-104**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,358.05 N 812,154.33	DATE from 21.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
21.10.11	HW	Dry at 08:00		86						0.35 T2101 0.80	+0.80	0.35			Wash boring.
				86						T2101 1.60	-0.45	1.60			Brown and yellowish grey, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
															Wash boring.
		3.93m at 18:00		93	0	0	>20	4.68		4.68 T2101	-3.53	4.68			Moderately strong, yellowish brown and yellowish grey spotted grey, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, rough planar, dipping at 10°-20°, 60°-70° and 80°-90°.
21.10.11 22.10.11		4.17m at 08:00		100	0	0	9.1	5.43		5.43 T2101				III	
								6.20		6.28 T2101	-5.05	6.20			Moderately weak to moderately strong, yellowish grey to pale grey, highly to moderately decomposed fine ash TUFF.
	7.85 HW			77	0	0	NI			7.25 T2101				IV/III	
				78	0	0		7.85		7.85 T2101	-6.70	7.85			Moderately strong, dark grey to yellowish grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to very closely locally medium spaced, rough planar, very narrow, manganese, limonite, kaolin and chlorite stained, dipping at 40°-50°, 60°-70° and 80°-90°.
				99	26	26	5.1	8.44		T2101					
							13.0	8.90		8.90 T2101				III	
				100	14	14	8.7			9.76 T2101	-8.85	10.00			
				100	0	0									

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-104**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,358.05 N 812,154.33	DATE from 21.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	0	0	8.7			T2101 10.40					As Sheet 1 of 2.
				100	0	0				T2101 11.09	-9.94	11.09			
							>20	11.09 11.25			-10.10	11.25			11.09- 11.25m: Highly fractured.
22.10.11		4.00m at 18:00		99	27	17				T2101 12.01					
24.10.11		4.21m at 08:00					6.1							III	
				100	33	33		13.06		T2101 13.36					
24.10.11		4.10m at 18:00		100	0	0	12.4	14.19		T2101 14.19	-13.04	14.19			End of drillhole at 14.19m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-107**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,346.58 N 812,151.47	DATE from 24.10.11 to 26.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.? Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	HW	Dry at 08:00		47						0.35 T2101 1.20	+0.80 -0.05	0.35 1.20			Wash boring. Black and brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL) Wash boring.
24.10.11	5.20 HW	4.10m at 18:00						5.20							
25.10.11		4.15m at 08:00		88	0	0				5.20 T2101	-4.05	5.20		V/IV	Extremely weak to very weak, brownish grey to yellowish brown, completely to highly decomposed fine ash TUFF. (Stiff, sandy SILT with some angular fine gravel sized rock fragments)
				79	0	0				5.60 T2101	-4.45	5.60			Moderately weak to moderately strong, yellowish grey spotted white, moderately decomposed fine ash TUFF.
							NI			6.80				IV/III	
				77	0	0				T2101					
								7.96		7.96	-6.81	7.96			Moderately strong, yellowish grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, smooth planar, very narrow to narrow, limonite, kaolin and chlorite stained, dipping at 10°-20°, 30°-40° and 60°-70°.
				98	72	71				T2101				III	
							6.6			9.26					
				98	41	41				T2101					
											-8.85	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.10.11

CHECKED EDWARD CHENG DATE 27.10.11

REMARKS

DRILLHOLE LOG J1105S08 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-107**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,346.58 N 812,151.47	DATE from 24.10.11 to 26.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.15 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.? Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	0	0	>20	10.09		T2101 10.09–10.40					As Sheet 1 of 2.
				100	29	29	7.2	10.40		T2101 10.40–11.10				III	
				86	35	35		11.23		T2101 11.10–11.47	-10.08	11.23		III	Moderately strong, yellowish grey spotted white, moderately decomposed fine ash TUFF, medium fractured. Joints are very closely to extremely closely spaced, limonite and manganese stained.
25.10.11		4.05m at 18:00		91	0	0	>20			T2101 11.47–11.80					
26.10.11		4.20m at 08:00		100	59	59	4.0	11.80		T2101 11.80–12.80	-10.65	11.80		II	Strong, dark grey to yellowish grey spotted black and white, slightly decomposed fine ash TUFF. Joints are closely spaced, rough planar, very narrow, dipping at 20°-30°, 60°-70° and 80°-90°.
				100	0	0	>20	12.80		T2101 12.80–13.35					
				100	84	84	8.8	13.35		T2101 13.35–13.65					
		4.15m at 18:00		100	67	67		14.03		T2101 13.65–14.03					
26.10.11				100	0	0				T2101 14.03–14.34	-13.19	14.34			End of drillhole at 14.34m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.10.11

CHECKED EDWARD CHENG DATE 27.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-169**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,185.67 N 812,112.91	DATE from 08.11.11 to 11.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.83 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.? Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
08.11.11	PW														Wash boring.
				95						T2116	4.20 -3.37	4.20			
											4.60 -3.77	4.60			Dark grey to yellowish brown, angular to subangular coarse GRAVEL sized rock and shell fragments and rubbers. (FILL)
	5.20 PW														Wash boring.
		0.00m at 18:00						5.20		T2116	5.20 -4.37	5.20			
08.11.11			88	0	0	NI								IV	Weak, yellowish grey to brownish grey, highly decomposed fine ash TUFF.
10.11.11		0.00m at 08:00						5.75			5.60 -4.93	5.76			
							10.3			T2101					
			96	42	22			6.44						III	Moderately strong, brownish grey to yellowish grey, moderately decomposed fine ash crystal TUFF with closely to very closely spaced joints, dipping at 10°-20° and 50°-60°.
							>20	6.66							
							10.5	7.04			6.92 -6.09	6.92			
			100	97	97		4.5			T2101					Strong, dark grey to greenish grey, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, smooth planar, very narrow to narrow, kaolin and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90° with some microfracture.
								8.60			8.28				
			100	53	51		5.3			T2101				II	
								9.36							
			99	42	42		8.5			T2101	9.62 -9.17	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 11.11.11	DATE 12.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-169**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,185.67 N 812,112.91	DATE from 08.11.11 to 11.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.83 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							8.5								As Sheet 1 of 2.
				89	42	42		10.66		T2101					
										11.12					
							2.8								
		0.00m at 18:00		99	39	39				T2101				II	
10.11.11								12.47		12.47					
11.11.11		0.00m at 08:00		100	100	100	6.1			T2101					
11.11.11								13.45		13.45	-12.62	13.45			End of drillhole at 13.45m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 11.11.11

CHECKED EDWARD CHENG DATE 12.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-170**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,173.52 N 812,110.01	DATE from 11.11.11 to 14.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.79 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.11.11	PW	0.00m at 08:00													Wash boring.
				81						T2116	6.20 -5.41	6.20			Yellowish grey to brownish grey, angular to subangular COBBLE sized rock and occasional wood fragments. (FILL)
				87	0	0	NI	7.73		T2116	7.73 -6.94	7.73			Weak to Moderately weak, brownish grey to pale grey, highly to moderately deocmposed fine ash TUFF.
	8.60 PW			74	0	0	NR	8.48 8.60		T2116	8.13			IV/III	
	HW										8.60 -7.81	8.60		V	Wash boring, assumed to be completely decomposed TUFF.
11.11.11	9.30 HW	0.00m at 18:00									9.30 -8.51	9.30			
12.11.11		0.00m at 08:00		66	0	0	NI 16.7 NR	9.30 9.45 9.75		T2101	-8.66 -8.96 -9.17	9.45 9.75 9.96		IV/III III V	Weak to Moderately weak, brownish grey to pale grey, highly to moderately deocmposed fine ash TUFF.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.11.11

CHECKED EDWARD CHENG DATE 15.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-170**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,173.52 N 812,110.01	DATE from 11.11.11 to 14.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.79 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								9.96							
				99	11	0	6.3	10.44		T2101					Moderately strong, brownish grey to dark grey spotted white, moderately decomposed fine ash TUFF. Joints are closely to very closely spaced, narrow to very narrow, limonite stained, dipping at 40°-50° and 60°-70°.
							18.8	10.76		10.76					No recovery assumed to be completely decomposed TUFF.
				100	17	17				T2101				II	Strong, dark grey to brownish grey spotted and streaked white, slightly decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough planar and smooth, very narrow, limonite, chlorite and calcite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
							7.0			11.62					
				100	20	20		12.05		T2101					
							7.3			12.60	-11.81	12.60			
				100	0	0	0.0	12.68		T2101	-11.96	12.75		III	12.60- 12.75m: Moderately strong and moderately decomposed TUFF.
							18.2	13.01		13.01					
				100	24	18	11.9			T2101					
							>20	13.79		13.79					
				100	73	60	8.7			T2101				II	
								14.71		14.71					
		0.00m at 18:00		100	22	0	12.2			T2101	-14.52	15.31			
12.11.11								15.61		15.61					Strong, dark grey spotted and streaked white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, rough planar, vary narrow, limonite and chlorite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
14.11.11		0.00m at 08:00 0.00m at 18:00		100	52	52	3.5			T2101				II	
14.11.11								16.76		16.76	-15.97	16.76			
															End of drillhole at 16.76m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.11.11

CHECKED EDWARD CHENG DATE 15.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-171**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,162.40 N 812,107.34	DATE from 12.11.11 to 14.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.75 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.11.11	HW	0.00m at 08:00									+0.35	0.40			Wash boring.
				84						0.40 T2116 1.20	-0.45	1.20			Black and brownish grey, angular to subangular COBBLE sized rock, concrete and wood fragments. (FILL)
															Wash boring.
								8.40		8.40	-7.65	8.40			
				80	0	0	NI			T2101				IV/III	Moderately weak to moderately strong, greyish brown to pale grey, highly to moderately decomposed fine ash TUFF.
	9.33 HW							8.90		8.90	-8.15	8.90		V	No recovery assumed to be completely decomposed TUFF.
								9.33		9.33	-8.58	9.33			
				24	0	0	NI	9.57		T2101				IV/III	Moderately weak to moderately strong, greyish brown to pale grey, highly to moderately decomposed fine ash TUFF.
							NR	9.74		9.74	-8.99	9.74			
				100	92	92	6.7			T2101	-9.25	10.00		III	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 14.11.11	DATE 15.11.11

REMARKS

DRILLHOLE LOG J1105306 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-171**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,162.40 N 812,107.34	DATE from 12.11.11 to 14.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.75 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	92	92	6.7	10.34		T2101 10.34	-9.59	10.34		III	Moderately strong, pale grey to dark grey spotted black and white, moderately decomposed coarse ash TUFF. Joints are closely spaced, rough planar, very narrow locally narrow, limonite and manganese stained, dipping at 10°-20°, 30°-40° and 60°-70°.
							4.2	10.82							
				99	99	92	8.7	11.05		T2101					Strong, dark grey spotted white and streaked yellowish grey, slightly decomposed fine ash crystal TUFF. Joints are closely to locally medium spaced, rough planar to stepped and smooth, calcite and limonite stained, dipping at 20°-30°, 40°-50°, 60°-70° and microfractures.
										11.75					
				100	100	81	6.3			T2101					
								12.81		12.81					
							1.5								
				100	47	47		13.48		T2101					
							8.3								
								14.08		14.08				II	
				100	87	76	5.5			T2101					
								15.35		15.35					
		0.00m at 18:00		100	83	67	9.3			T2101					
12.11.11								16.21		16.21					
14.11.11		0.00m at 08:00					12.9	16.52							
				100	22	16				T2101					
							6.8								
								17.70		17.30					
		0.00m at 18:00		100	74	74	3.5			T2101					
14.11.11								18.27		18.27	-17.52	18.27			End of drillhole at 18.27m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.11.11

CHECKED EDWARD CHENG DATE 15.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-172**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR25	E 835,151.00 N 812,104.63	DATE from 15.11.11 to 16.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
15.11.11	PW	0.00m at 08:00									+0.39	0.35			Wash boring.
				75						0.35 T2116 1.40					Dark grey, angular to subangular COBBLE sized rock and concrete fragments. (FILL)
	1.40 PW HW										-0.66	1.40			Wash boring.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-172**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR25	E 835,151.00 N 812,104.63	DATE from 15.11.11 to 16.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.74 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.T./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.03		10.03	-9.29	10.03			As Sheet 1 of 2.
				100	17	0	11.6	10.89		T2101					Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely spaced, smooth planar to undulating, calcite, limonite and chlorite stained, dipping at 10°-20°, 40°-50°, 60°-70° and 80°-90°.
							14.8	11.43		11.43					
				100	0	0	7.8	12.07		T2101					
							>20	12.40		12.40					
							7.7	13.05		T2101				II	
15.11.11		0.00m at 18:00		100	63	39	17.1	13.46							
16.11.11		0.00m at 08:00					6.9	13.89		13.89					
				99	34	27	13.3	14.33		T2101					
								14.63		14.63					
				100	46	29	8.1	15.25		T2101					
							17.0	15.72		15.69					
16.11.11		0.00m at 18:00		100	65	47	13.0	16.26		T2101	-15.52	16.26			End of drillhole at 16.26m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 16.11.11

CHECKED EDWARD CHENG DATE 17.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-173**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,138.98 N 812,101.60	DATE from 16.11.11 to 18.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
16.11.11	PW	Dry at 08:00									+0.31	0.40			Wash boring.
		0.00m at 18:00		94						T2116					Dark grey, angular to subangular COBBLE sized rock fragments. (FILL)
	1.30									0.40					
16.11.11	PW									1.30	-0.59	1.30			
17.11.11	HW	0.00m at 08:00													Wash boring.
								6.30		6.30	-5.59	6.30			
				81	0	0	NI			T2101				IV	Weak to moderately weak, brown to yellowish grey, highly decomposed fine ash TUFF.
								7.10		7.10	-6.39	7.10			
														V	Wash boring, assumed to be completely decomposed TUFF.
	9.31 HW														
								9.31		9.31	-8.60	9.31			
				50	0	0	NI			T2101				IV	Weak, brown to yellowish grey, highly decomposed fine ash TUFF.
								9.71		9.71	-9.00	9.71			
				100	33	22	9.4			T2101	-9.29	10.00		III	Moderately strong, grey spotted white, moderately

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.11.11

CHECKED EDWARD CHENG DATE 19.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-173**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,138.98 N 812,101.60	W.O. No.
MACHINE / No. DR12		DATE from 16.11.11 to 18.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	33	22	9.4	10.56		T2101 10.56	-9.85	10.56		III	decomposed fine ash crystal TUFF. Joints are closely spaced, rough planar to undulating, very narrow to narrow, limonite, manganese and chlorite stained, dipping at 50°-60° and 70°-80°.
				100	90	68	5.1			T2101 11.18					Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, smooth planar to undulating, very narrow, limonite and chlorite stained, slightly calcite coated, dipping at 30°-40°, 50°-60°, 70°-80° and 80°-90°.
				100	58	58		11.73		T2101 11.99					
							6.9								
17.11.11		0.00m at 18:00		100	57	19		12.60		T2101 13.02				II	
18.11.11		0.00m at 08:00					14.3								
				100	70	58		13.30		T2101 14.06					
							7.2								
				100	74	74				T2101 14.82					
18.11.11		0.00m at 18:00		100	100	100	5.6	14.82 15.18		T2101 15.18	-14.47	15.18			End of drillhole at 15.18m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 18.11.11

CHECKED EDWARD CHENG DATE 19.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-174**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,125.62 N 812,098.87	W.O. No.
MACHINE / No. DR12		DATE from 03.11.11 to 05.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.11.11	0.40 PW	0.00m at 08:00									+0.31	0.40			Wash boring.
	HW			68						0.40 T2116 1.05	-0.34	1.05			Dark grey to yellowish brown, angular to subangular COBBLE sized rock fragments. (FILL)
															Wash boring.
				75						6.50 T2101 7.30	-5.79	6.50			Dark grey to yellowish brown, angular to subangular COBBLE sized rock fragments. (FILL)
											-6.59	7.30			Wash boring.
	8.50 HW														
03.11.11		0.00m at 18:00		84	44	24	18.4	8.55		8.55 T2101 9.00	-7.84	8.55		IV/III	Moderately weak to moderately strong, pale grey spotted white and black, highly to moderately decomposed altered coarse ash TUFF. Joints are closely to very closely spaced, rough planar, narrow to very narrow, limonite and kaolin stained. dipping at 10°-20° and 40°-50°.
05.11.11		0.00m at 08:00		100	100	100	2.7	9.00		T2101	-8.29	9.00		II	Strong, dark grey spotted white and black, slightly decomposed altered coarse ash TUFF. Joints are
											-9.29	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.11.11

CHECKED EDWARD CHENG DATE 06.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-174**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,125.62 N 812,098.87	DATE from 03.11.11 to 05.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							2.7	10.46							widely to closely spaced, rough planar to undulating, very narrow, limonite, manganese locally kaolin stained, dipping at 10°-20°, 40°-50° and 60°-70°.
				180	100	100	8.8	10.80		T2101 10.00					
							5.4			11.36				II	
				100	100	76		12.27		T2101					
							17.2	12.56		12.56	-11.85	12.56			
				100	100	100	8.5			T2101				III/II	Moderately strong to strong, pale grey spotted white and black, moderately decomposed fine to coarse ash TUFF. Joints are medium to closely spaced, smooth planar, very narrow, kaolin and limonite kaolin, dipping at 20°-30° and 60°-70°.
										13.40					
				100	88	88		13.85		T2101	-13.14	13.85			
05.11.11		0.00m at 18:00					4.1			14.32				II	Strong, dark grey spotted white, slightly decomposed altered fine to coarse crystal TUFF. Joints are closely to medium spaced, rough planar, very narrow, chlorite and kaolin stained, dipping at 10°-20° and 80°-90°.
				100	100	100		14.83		T2101 14.83	-14.12	14.83			
															End of drillhole at 14.83m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.11.11

CHECKED EDWARD CHENG DATE 06.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-175**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,112.75 N 812,097.59	DATE from 02.11.11 to 02.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Return %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.11.11	HW	0.00m at 08:00		92						0.50 T2101 1.10	+0.18 -0.42	0.50 1.10			Wash boring. Angular COBBLE and BOULDER sized rock fragments. (FILL) Wash boring.
	8.03 HW			100	100	67	5.0	8.03 8.90		8.03 T2101 9.23	-7.35 -8.22	8.03 8.90		II	Strong, grey spotted pink, slightly decomposed coarse MONZONITE with closely to medium spaced joints, dipping at 20°-30° and 60°-70°.
				100	100	60	9.0			T2101	-9.32	10.00		II	Strong, light grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, clean, dipping at 20°-30° and 60°-70°.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.11.11

CHECKED EDWARD CHENG DATE 03.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-175**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,112.75 N 812,097.59	DATE from 02.11.11 to 02.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.11.11		0.00m at 18:00		100	100	60				T2101 10.25					As Sheet 1 of 2.
				100	100	66	9.0	11.78		T2101 11.78				II	
				100	100	100				T2101 12.57					
				100	100	80	3.5	13.63		T2101 13.63	-12.95	13.63			End of drillhole at 13.63m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.11.11

CHECKED EDWARD CHENG DATE 03.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-176**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,099.33 N 812,096.94	DATE from 10.11.11 to 11.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.11.11	PW	0.00m at 08:00													Wash boring.
				97					T2116	0.40	+0.23	0.40			Dark grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock and concrete fragments. (FILL)
	1.10 PW HW									1.55	-0.92	1.55			Wash boring.
				89	0	0	NI	5.40	T2116	5.40	-4.77	5.40	× × × ×	IV/III	Moderately weak to moderately strong, greenish grey to yellowish grey spotted pink, highly to moderately decomposed MONZONITE.
								5.85		5.85	-5.22	5.85		V	Wash boring, assumed to be completely decomposed MONZONITE.
	9.40 HW			100	100	94	1.7	9.40	T2101	9.40	-8.77	9.40	× × × ×	II	Strong, dark grey to pinkish grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to medium spaced, rough planar, very narrow,
											-9.37	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.11.11

CHECKED EDWARD CHENG DATE 13.11.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_26032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-176**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,099.33 N 812,096.94	W.O. No.
MACHINE / No. DR12		DATE from 10.11.11 to 11.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.63 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	94	1.7	10.60		T2101					manganese stained, dipping at 20°-30°.
							8.0	10.85		10.85				II	
				100	100	100	0.7	12.31		T2101					
										12.30	-11.67	12.30			
							5.3			T2101				III	Strong, dark grey spotted white, slightly decomposed coarse ash crystal TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20° and 60°-70°.
				99	64	53		13.07							12.30- 13.55m: Moderately strong and moderately decomposed TUFF.
							10.0				-12.92	13.55			
		0.00m at 18:00		100	100	100		13.77		13.77 T2101				II	
10.11.11							1.8			14.35 T2101					
11.11.11		0.00m at 08:00		100	100	100									
11.11.11								14.91		14.91	-14.28	14.91			End of drillhole at 14.91m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 12.11.11

CHECKED EDWARD CHENG DATE 13.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-177**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,094.78 N 812,096.64	DATE from 07.11.11 to 08.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.11.11	HW	0.00m at 08:00		89						0.35 T2116 1.25	+0.26	0.35			Wash boring.
											-0.64	1.25			Black and brown, coarse GRAVEL and COBBLE sized rock fragments. (FILL)
															Wash boring.
								6.80		6.80	-6.19	6.80			
											-6.44	7.05			Black and brown, coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				86	0	0	NI			T2101			× × × × × × × ×	IV/III	Moderately weak to moderately strong, brownish grey, highly to moderately decomposed MONZONITE.
				68	0	0		8.05		7.50 T2101	-7.44	8.05			Wash boring, assumed to be completely decomposed MONZONITE.
	9.64 HW													V	
				100	100	100	3.5	9.64		9.64 T2101	-9.03	9.64	× × × ×	II	Strong, dark pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are
											-9.39	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.11.11

CHECKED EDWARD CHENG DATE 09.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-177**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,094.78 N 812,096.64	DATE from 07.11.11 to 08.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.61 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	100	100	3.5			T2101 10.61	-10.09	10.70	× × × × × ×	II	medium spaced, rough planar, very narrow, dipping at 10°-20° and 20°-30°.
				97	58	45	12.1	10.77 / 11.16		T2101 11.28	-10.49	11.10	× × × × × ×	III	Moderately strong, brownish grey spotted black and white, moderately decomposed MONZONITE. Joints are closely spaced, narrow, limonite and manganese stained, dipping at 10°-20° and 30°-40°.
				100	100	95	5.4			T2101 12.22			× × × × × ×	II	Strong, dark pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium spaced, rough planar, very narrow, dipping at 10°-20° and 20°-30°.
							1.7	12.22							
				100	100	83	11.4	12.80 / 13.15		T2101 13.67	-12.51	13.12	× × × × × ×	II	Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joins are closely to medium spaced, rough undulating, very narrow, limonite and calcite stained, dipping at 10°-20° and 60°-70°. 13.45- 13.51m: Quartz vein.
07.11.11		0.00m at 18:00		100	76	76	4.3			T2101 14.77	-12.84 -12.90	13.45 13.51			
08.11.11		0.00m at 08:00 0.00m at 18:00		100	100	100	2.0	14.77		T2101 15.77	-14.39	15.00		II	Strong, dark grey spotted black and white, slightly decomposed coarse ash TUFF. Joints are widely spaced, rough undulating, very narrow, limonite stained, dipping at 10°-20°.
08.11.11								15.77			-15.16	15.77			End of drillhole at 15.77m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.11.11

CHECKED EDWARD CHENG DATE 09.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-182**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,174.05 N 812,102.24	DATE from 03.11.11 to 05.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.86 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.11.11	PW	0.00m at 08:00		78							+0.61	0.25			Wash boring.
									T2116	0.25					Black and brownish grey, angular to subangular COBBLE sized rock fragments. (FILL)
										0.70	+0.16	0.70			Wash boring.
									T2116	6.00	-5.14	6.00			Firm to stiff, yellowish brown to yellowish grey, SILT with some gravel and cobble sized rock fragments. (COLLUVIUM)
	6.80 PW			63						6.80	-5.94	6.80			Wash boring.
	HW									7.00	-6.14	7.00			Brownish grey to yellowish brown, subangular to subrounded COBBLE sized rock fragments. (ALLUVIUM)
				71					T2116	7.50	-6.64	7.50			Wash boring.
03.11.11	7.92 HW	0.00m at 18:00						7.92		7.92	-7.06	7.92			
05.11.11		0.00m at 08:00		100	0	0	12.0		T2101	8.64	-7.93	8.79		III	Moderately strong, dark grey spotted white and greenish grey, moderately decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough planar and stepped, very narrow, limonite and calcite stained, dipping at 10°-20°, 50°-60° and 80°-90° with some microfractures.
				100	0	0	11.8	8.48	T2101	9.36	-8.65	9.51		II	Strong, dark grey, slightly decomposed fine ash TUFF. Joins are closely to medium spaced, rough planar, very narrow, dipping at 30°-40°, 40°-50° and 60°-70°.
				100	0	0	9.3	8.82	T2101	9.84	-9.14	10.00			
				100	0	0	11.4	9.36	T2101						
				100	33	0									

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.11.11

CHECKED EDWARD CHENG DATE 06.11.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-182**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,174.05 N 812,102.24	DATE from 03.11.11 to 05.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.86 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	P.I.T. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.11.11		0.00m at 18:00		100	33	0	11.4 18.0	10.24 10.74		T2101 10.74				II	As Sheet 1 of 2.
				100	0	0	7.3 11.6	11.15 11.58		T2101 11.58					
				100	28	19	4.4 10.9	12.03 12.67		T2101 12.67	-11.22 -11.58	12.08 12.44		III	12.08- 12.44m: Moderately strong and moderately decomposed TUFF.
				100	0	0	10.2	13.16		T2101 13.16				II	
				100	26	26	7.9	13.92		T2101 13.92					
				100	67	67	14.8 6.2	14.19 14.67		T2101 14.67	-13.81	14.67			End of drillhole at 14.67m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 05.11.11

CHECKED EDWARD CHENG DATE 06.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-183**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,161.93 N 812,099.40	DATE from 02.11.11 to 03.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.86 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.11.11	0.30 PW HW	0.00m at 08:00		60						0.30 T2101 1.00	+0.56 -0.14	0.30 1.00			Wash boring. Angular COBBLE sized rock fragments. (FILL) Wash boring.
	5.60 HW			100	100	81	6.0	5.60		5.60 T2101	-4.74	5.60		II	Strong, light grey to grey, slightly decomposed fine ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, slightly kaolin coated, clean, dipping at 20°-30°, 40°-50°, 60°-70° and vertical.
				100	100	50	>20	6.60 6.83		6.83 T2101					
				100	100	0	6.2			7.66 T2101					
				100	100	50				8.11 T2101					
										8.60					
		0.00m at		100	100	73	>20	9.40 9.80		T2101	-9.14	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.11.11

CHECKED EDWARD CHENG DATE 04.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-183**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,161.93 N 812,099.40	DATE from 02.11.11 to 03.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.86 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.11.11 03.11.11		18:00 0.00m at 08:00		100	100	69	4.8			10.12 T2101 11.57				II	As Sheet 1 of 2.
03.11.11		0.00m at 18:00		100	100	88	>20	12.10 12.42		T2101 12.42	-11.56	12.42			End of drillhole at 12.42m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.11.11

CHECKED EDWARD CHENG DATE 04.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-184**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,152.19 N 812,096.67	DATE from 29.10.11 to 01.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.82 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I.T Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
29.10.11	PW	0.00m at 08:00		60						0.30 T2116 0.90	+0.52	0.30			Wash boring.
	0.90 PW														Grey to yellowish grey, coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	HW										-0.08	0.90			Wash boring.
29.10.11	6.50 HW	0.00m at 18:00													
31.10.11		0.00m at 08:00		100	42	42	7.5	6.50		6.50 T2101 7.77	-5.68	6.50			Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, smooth planar, very narrow, kaolin, chlorite and limonite stained, dipping at 10°-20°, 40°-50° and 60°-70°.
				100	77	72	5.0	7.97		T2101 9.25				II	
				100	19	13	9.0	8.77		T2101	-9.18	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.11.11

CHECKED EDWARD CHENG DATE 02.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-184**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,152.19 N 812,096.67	W.O. No.
MACHINE / No. DR10		DATE from 29.10.11 to 01.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.82 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							9.0	10.44		T2101 10.14					As Sheet 1 of 2.
				100	46	42	6.8			T2101				II	
31.10.11		0.00m at 18:00						11.62		11.62					
01.11.11		0.00m at 08:00								T2101					
01.11.11		0.00m at 18:00		89	83	83	6.5	12.70		12.70	-11.88	12.70			End of drillhole at 12.70m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 01.11.11

CHECKED EDWARD CHENG DATE 02.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-185**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,140.72 N 812,094.40	DATE from 28.10.11 to 29.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.80 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
28.10.11	0.50 PW HW	0.00m at 08:00		57						T2101 0.00 – 0.70	+0.10	0.70			Dark grey, coarse GRAVEL and COBBLE sized rock fragments. (FILL)
															Wash boring.
	5.85 HW							5.85		5.85	-5.05	5.85			Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are medium to closely spaced, smooth planar, very narrow, chlorite and limonite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
				100	90	90	4.3			T2101					
				100	70	56	10.7	7.47		7.10 T2101 7.67					
				100	82	76	2.7	7.75		T2101				II	
							7.3	8.87		9.05					
				99	49	27	NI 6.5	9.42 9.47		T2101	-9.20	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 29.10.11	DATE 30.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-185**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,140.72 N 812,094.40	DATE from 28.10.11 to 29.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.80 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
28.10.11		0.00m at 18:00		99	49	27	6.5			T2101					As Sheet 1 of 2.
29.10.11		0.00m at 08:00						10.55		10.55					
				100	73	73	3.8			T2101				II	
29.10.11		0.00m at 18:00						12.12		12.12	-11.32	12.12			End of drillhole at 12.12m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 29.10.11

CHECKED EDWARD CHENG DATE 30.10.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-186**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,128.35 N 812,091.60	DATE from 26.10.11 to 27.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.80 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.10.11	PW	Dry at 08:00		50						T2101 0.00					Black and brown, angular to subangular coarse GRAVEL, COBBLE and BOULDER sized rock and brick fragments. (FILL)
										1.20	-0.40	1.20			Wash boring.
				96						1.82	-1.02	1.82			Black and brown, angular to subangular coarse GRAVEL, COBBLE and BOULDER sized rock and brick fragments. (FILL)
										T2101 2.55					
	3.10 PW			87						T2101 3.10	-2.30	3.10			
	HW														Wash boring.
26.10.11	6.88 HW	0.20m at 18:00								6.88	-6.08	6.88			
27.10.11		0.20m at 08:00		82				7.10		T2101 7.10	-6.30	7.10		III	Black and brown, angular to subangular coarse GRAVEL, COBBLE and BOULDER sized rock and brick fragments. (FILL)
							7.5				-6.83	7.63			Moderately strong, yellowish grey spotted black and white, moderately decomposed fine ash TUFF. Joints are closely spaced, rough planar, very narrow, manganese and limonite stained, dipping at 10°-20°.
				100	69	58	2.4	7.63		T2101					
							13.7	8.04							
								8.55		8.40					Strong, dark grey to yellowish grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are closely to medium spaced, smooth planar, very narrow, kaolin and limonite stained, dipping at 10°-20°, 40°-50°, 70°-80° and 80°-90°.
				100	92	84	3.4	9.13		T2101				II	
										9.19					
				100	47	36	8.8	9.81		T2101					
							10.4				-9.20	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 27.10.11

CHECKED EDWARD CHENG DATE 28.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-186**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,128.35 N 812,091.60	DATE from 26.10.11 to 27.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.80 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
27.10.11		0.00m at 18:00		100	47	36	10.4	10.29		T2101 10.29					As Sheet 1 of 2.
							15.8								
				100	53	53	6.9	10.67 10.96		T2101 11.19					
				100	25	25	5.1			T2101 11.94				II	
								11.94							
				99	79	74	6.4			T2101 13.35	-12.55	13.35			
								13.35							End of drillhole at 13.35m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 27.10.11

CHECKED EDWARD CHENG DATE 28.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-187**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,116.62 N 812,090.07	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.81 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	HW	0.00m at 08:00													Wash boring.
	5.80 HW			69						T2101	5.80 -4.99	5.80			Black and brown, angular to subangular COBBLE sized rock fragments. (FILL)
		0.00m at 18:00		100	0	0	15.6	6.38		T2101	6.38 -5.57	6.36		III	Moderately strong, brownish grey to greenish grey spotted white, moderately decomposed fine ash crystal TUFF. Joints are closely spaced, rough planar, very narrow, manganese, limonite and chlorite stained, dipping at 20°-30° and 80°-90°.
24.10.11 25.10.11		0.00m at 08:00					2.7	6.70		T2101	6.70 -5.89	6.70			
				99	46	46	5.3	7.44		T2101					Strong, dark grey spotted white, slightly decomposed fine ash crystal TUFF. Joints are medium to closely spaced, smooth planar, very narrow, chlorite and calcite stained, dipping at 30°-40°, 60°-70° and 80°-90°.
				100	82	82	2.5	8.20		T2101	8.20			II	
				100	75	61	6.9	9.00		T2101	9.00 -9.19	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-187**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,116.62 N 812,090.07	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.81 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.10.11		0.00m at 18:00		100	75	61	6.9	10.30		T2101 10.30					As Sheet 1 of 2.
							>20	10.39							
				100	70	70	2.7			T2101					
								11.12		11.12					
				100	77	73	5.6			T2101				II	
							>20	11.83							
								12.07		12.07					
				100	99	99	6.5			T2101					
								12.84		12.84	-12.03	12.84			End of drillhole at 12.84m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-188**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,106.13 N 812,089.40	DATE from 22.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.79 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.10.11	0.40 PW HW	Dry at 08:00		100						T2101 0.40	+0.39	0.40			Wash boring.
										T2101 0.80	-0.01	0.80			Yellowish brown to reddish brown, angular to subangular COBBLE sized rock fragments with sandy silt matrix. (FILL)
															Wash boring.
	5.75 HW			62						T2101 5.75	-4.96	5.75			Yellowish brown to reddish brown, angular to subangular COBBLE sized rock fragments with sandy silt matrix. (FILL)
				100	59	51	4.4	5.99		T2101 5.99	-5.20	5.99			Strong, dark grey spotted white, slightly decomposed fine ash TUFF. Joints are widely to closely spaced, smooth planar, very narrow, calcite and chlorite stained, dipping at 30°-40°, 40°-50° and 80°-90°.
				100	100	100	2.0	6.58		T2101 6.58				II	
				100	49	44	8.8	8.60		T2101 8.05	-8.36	9.15		II	Strong, dark grey spotted black and white, slightly decomposed coarse ash TUFF. Joints are widely to closely spaced, smooth planar, very narrow, calcite and chlorite stained, dipping at 20°-30°, 60°-70° and 80°-90°.
				89	69	69	2.4	9.51		T2101 9.51	-9.21	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-188**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,106.13 N 812,089.40	DATE from 22.10.11 to 24.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.79 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.10.11 24.10.11		0.20m at 18:00 0.10m at 08:00		89	69	69	2.4	10.78		T2101 10.78					As Sheet 1 of 2.
24.10.11				100	58	58	2.2	12.15		T2101 12.15	-11.36	12.15		II	End of drillhole at 12.15m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 24.10.11

CHECKED EDWARD CHENG DATE 25.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-189**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,095.03 N 812,088.93	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.78 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
20.10.11	PW	Dry at 08:00									+0.28	0.50			Wash boring.
				64						0.50 T2116					Dark grey and brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	1.20 PW									1.20	-0.42	1.20			Wash boring.
	HW														
	7.90 HW			67				7.90		7.50 T2101	-6.72	7.50			Dark grey and brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
										7.80	-7.02	7.80			Wash boring.
							>20	8.12		7.90 T2101	-7.12	7.90			Moderately strong, dark grey to yellowish brown spotted white, moderately decomposed coarse ash crystal TUFF. Joints are closely to very closely spaced, rough planar, narrow, manganese and limonite stained, dipping at 10°-20° and 80°-90°.
		0.00m at 18:00		96	0	0	8.5				-8.05	8.63		III	
							NI	8.83 9.06			-8.28	9.06		IV	Moderately weak, brown, highly decomposed coarse ash TUFF, highly fractured.
20.10.11 21.10.11		0.00m at 08:00		100	0	0	6.7			9.26 T2101				III	Moderately strong, brownish grey spotted black and white, moderately decomposed coarse ash crystal TUFF. Joints are closely to very closely spaced, rough
											-9.22	10.00			

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-189**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,095.03 N 812,088.93	DATE from 20.10.11 to 21.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.78 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.10		10.10					planar, very narrow to narrow, kaolin, limonite and chlorite stained, dipping gat 40°-50° and 80°-90°.
				100	18	16	5.7			T2101				III	
								11.32			-10.54	11.32			
							6.5	11.63		11.63					Strong, dark grey spotted white, slightly decomposed coarse ash crystal TUFF. Joints are medium to closely spaced, rough planar, very narrow, kaolin and limonite stained, dipping at 10°-20° and 80°-90°.
				89	88	88				T2101					
										12.44					
							3.1			T2101				II	
				100	84	84									
								13.91		13.91					
				100	83	83	2.8			T2101					
21.10.11		0.00m at 18:00						15.34		15.34	-14.56	15.34			End of drillhole at 15.34m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 21.10.11

CHECKED EDWARD CHENG DATE 22.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDD-002**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,196.58 N 812,116.66	DATE from 05.11.11 to 08.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.82 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05.11.11	PW	0.00m at 08:00		75						T2116 0.60–0.72	+0.22 +0.10	0.60 0.72			Wash boring.
															Dark grey to black, angular to subangular COBBLE sized rock fragments. (FILL)
															Wash boring.
	3.10 PW														
	HW						>20	3.10 3.23			3.10	-2.28	3.10		
				95	0	0	18.2			T2116					Moderately weak to moderately strong, yellowish grey to yellowish brown, highly to moderately decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough planar, narrow to very narrow, limonite, manganese and kaolin stained, dipping at 10°-20° and 50°-60°.
	3.85 HW						>20	3.56 3.85			3.85			IV/III	
							10.7			T2101		-3.78	4.60		
				78	16	0	NI	4.60 4.77				-3.95	4.77	IV	Moderately weak brownish grey to brown, highly decomposed fine ash crystal TUFF.
							NR	5.05				-4.23	5.05	V	No recovery assumed to be completely decomposed TUFF.
							NI	5.44			5.15	-4.62	5.44	IV/III	Moderately weak to moderately strong, yellowish brown to yellowish grey, highly to moderately decomposed fine ash TUFF.
				97	57	0	13.0			T2101		-5.18	6.00	III	Moderately strong, yellowish grey, moderately decomposed fine ash crystal TUFF. Joints are closely to very closely spaced, rough planar, narrow to very narrow, manganese and kaolin stained, dipping at 10°-20° and 30°-40°.
							>20	5.90 5.95							
							13.4			T2101	6.37			II	
				100	40	20						-6.62	7.44		Strong, dark grey to greenish grey spotted and streaked white, slightly decomposed fine ash crystal TUFF. Joints are closely spaced, rough planar, very narrow, limonite, manganese and locally kaolin stained, dipping at 10°-20°, 50°-60° and microfractures.
							>20	7.44 7.73			7.73	-6.91	7.73	III	
															Moderately strong, brown to brownish grey, moderately decomposed fine ash crystal TUFF. Joints are very closely to closely spaced, rough planar, very narrow, manganese, kaolin and chlorite stained, dipping at 20°-30°, 40°-50° and 60°-70°.
		0.00m at 18:00		99	81	71	6.3			T2101				II	
05.11.11 07.11.11		0.00m at 08:00									9.15				Strong, dark grey to greenish grey spotted and streaked white, slightly decomposed fine ash crystal TUFF. Joints are medium locally very closely spaced, smooth and undulating, very narrow, limonite and chlorite stained, dipping at 50°-60°, 70°-80°, 80°-90° and microfractures.
							>20	9.15 9.25							
				100	0	0	14.1			T2101					
								9.89			-9.18	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.11.11

CHECKED EDWARD CHENG DATE 09.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 10.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDD-002**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,196.58 N 812,116.66	DATE from 05.11.11 to 08.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +0.82 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	0	0	6.8			T2101 10.19					As Sheet 1 of 2.
				100	16	16	6.8	11.07		T2101 11.47					
				100	54	54	5.5	12.16 12.33		T2101 12.73					
				100	13	13	17.6			T2101 13.83				II	
		0.00m at 18:00		99	59	55	5.6	15.02		T2101 15.02					
07.11.11 08.11.11		0.00m at 08:00		100	49	27	16.3	15.45		T2101 16.12					
08.11.11		0.00m at 18:00		100	75	75	5.2	16.79		T2101 16.79	-15.97	16.79			End of drillhole at 16.79m.

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 10.2.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED	CHECKED
S.O. CHAN	EDWARD CHENG
DATE 08.11.11	DATE 09.11.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-017**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,682.81 N 812,174.90	DATE from 28.09.11 to 03.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
28.09.11	PW			49						T2116 0.00–1.00	+5.91	1.00			Brownish grey to brown, angular to subangular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
															Wash boring.
28.09.11		3.71m at 18:00													
30.09.11		3.92m at 08:00		80						T2116 4.20–5.00	+2.71	4.20			CONCRETE.
				57						T2116 5.00–6.00	+1.91	5.00			Brownish grey to brown, angular to subangular COBBLE and BOULDER sized rock and concrete fragments. (FILL)
	6.00 PW										+0.91	6.00			
	HW			75						T2116 6.00–7.00					Yellowish brown to pale grey, subrounded to subangular coarse GRAVEL and COBBLE sized rock fragments. (ALLUVIUM)
				50						T2116 7.00–7.60	-0.69	7.60			
	9.50 HW							9.50							Wash boring.
				100	24	0	19.7			T2101 9.50–10.00	-2.59 -3.09	9.50 10.00		III	Moderately strong, pinkish brown to yellowish brown spotted black and grey, moderately decomposed coarse ash TUFF. Joints are closely to very closely

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.10.11

CHECKED EDWARD CHENG DATE 04.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-017**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,682.81 N 812,174.90	DATE from 28.09.11 to 03.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +6.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	24	0	11.8	10.11 10.45		T2101					spaced, rough planar, narrow, kaolin and limonite stained, dipping at 10°-20° and 80°-90°.
							>20	10.82 11.09						III	
				100	54	40	8.3			T2101					
								12.07			-5.16	12.07			
				100	88	82	1.6	12.17		T2101					Moderately strong to strong, greenish grey to pinkish grey spotted black and white, slightly decomposed coarse ash TUFF. Joints are closely to medium spaced, rough planar, narrow to very narrow, chlorite, kaolin and limonite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
30.09.11		3.65m at 18:00						13.40							
03.10.11		3.96m at 08:00		100	100	94	3.2	13.54		T2101				III/II	
								15.01							
				100	90	87		16.20		T2101					
											-9.29	16.20			
				100	19	19	9.2	16.43		T2101					Moderately strong, greenish grey spotted pink, moderately decomposed coarse ash TUFF. Joints are closely to very closely spaced, rough planar to undulating, chlorite and limonite stained, dipping at 60°-70° and 80°-90°.
								17.16							
				100	21	21	>20	17.62 17.84		T2101				III	
				100	43	0	11.4	18.63		T2101					
03.10.11		3.76m at 18:00		100	0	0		19.24		T2101	-12.33	19.24			End of drillhole at 19.24m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.10.11

CHECKED EDWARD CHENG DATE 04.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-017A**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,674.38 N 812,176.18	DATE from 04.10.11 to 07.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
04.10.11	PW	Dry at 08:00		61						T2101 0.00–1.30	+6.09	1.30			Dark grey and yellowish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments and locally wood fragments. (FILL)
															Wash boring.
		3.50m at 18:00													
04.10.11															
06.10.11		3.62m at 08:00		61						T2101 4.05–5.50	+3.34	4.05			Dark grey and yellowish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments and locally wood fragments. (FILL)
											+1.89	5.50			Wash boring.
	6.10 PW										+1.29	6.10			
	HW									T2101 6.10–7.60	+1.09	6.30			Dark grey and yellowish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments and locally wood fragments. (FILL)
				68											Yellowish brown to yellowish grey, subrounded to subangular COBBLE sized rock fragments. (ALLUVIUM)
											-0.21	7.60			Wash boring.
											-2.61	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.10.11

CHECKED EDWARD CHENG DATE 10.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-017A**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR11	E 835,674.38 N 812,176.18	DATE from 04.10.11 to 07.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															As Sheet 1 of 2.
06.10.11	11.77 HW	3.43m at 18:00						11.77		11.77	-4.38	11.77			
07.10.11		3.45m at 08:00		97	0	0	18.8	12.09	T2101	12.64					Moderately strong, yellowish grey to pinkish grey spotted pink and black, moderately decomposed coarse ash TUFF. Joints are closely spaced, rough planar to undulating, very narrow, limonite and manganese stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							6.6	12.85							
				100	60	32	11.8	13.19	T2101	13.89					
							13.2	13.57							
							9.4	13.89						III	
				100	51	25	15.3	14.48	T2101	14.48					
				100	84	84	15.7	15.56	T2101	15.56					
							13.2	16.09			-8.76	16.15			
				100	79	76	7.1	16.87	T2101	16.87				II	Strong, dark grey to pinkish grey spotted black and pink, slightly decomposed coarse ash TUFF. Joints are medium to closely spaced, rough planar, very narrow, chlorite, limonite and occasional kaolin stained, dipping at 10°-20°, 30°-40° and 80°-90°.
							3.5	17.08							
				100	75	75	14.5	17.65	T2101	18.34	-10.26	17.65			Moderately strong, brownish grey to pinkish brown, moderately decomposed coarse ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, chlorite and limonite stained, dipping at 30°-40° and 60°-70°.
								18.34							
				100	78	78	8.0	19.47	T2101	19.47	-12.08	19.47		III	
07.10.11		3.51m at 18:00													End of drillhole at 19.47m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.10.11

CHECKED EDWARD CHENG DATE 10.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-020**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,663.97 N 812,176.47	DATE from 23.09.11 to 27.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
23.09.11	PW	Dry at 08:00													Wash boring.
	3.80 PW										3.80	+3.66	3.80		
	HW			70						T2101					Dark grey to brown, angular to subangular coarse GRAVEL, COBBLE and BOULDER sized rock fragments. (FILL)
											4.50				
		3.50m at 18:00		60						T2101					
	5.20 HW										5.00	+2.46	5.00		
23.09.11											5.20	+2.26	5.20		Wash boring.
24.09.11		3.60m at 08:00		90						T2101					Dark grey to brown, angular to subangular coarse GRAVEL sized rock fragments. (FILL)
											6.20	+1.26	6.20		
				87						T2101					Brown to yellowish grey, subrounded to subangular coarse GRAVEL and COBBLE sized rock fragments. (ALLUVIUM)
								7.24			7.24	+0.22	7.24		
				100	89	89				T2101					Moderately strong, dark grey to brownish grey spotted black and white, moderately decomposed coarse ash TUFF. Joints are closely to medium spaced, rough planar to undulating, narrow, limonite, kaolin and manganese stained, dipping at 30°-40°, 60°-70° and 80°-90°.
											8.12				
				100	94	94	4.4			T2101				III	
											8.92				
				99	51	47				T2101					
												-2.54	10.00		

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 27.09.11

CHECKED EDWARD CHENG DATE 28.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-020**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,663.97 N 812,176.47	DATE from 23.09.11 to 27.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				99	51	47	10.7	9.99		T2101 10.29				III	As Sheet 1 of 2.
				93	0	0	NI	10.74		T2101 11.02	-3.28	10.74		III	Moderately strong, brown to yellowish brown, moderately decomposed coarse ash TUFF, highly fractured.
				99	71	71	3.1	11.21		T2101 11.80	-3.75	11.21		II	Strong, dark grey spotted black and white, slightly decomposed coarse ash TUFF. Joints are medium to widely spaced, rough planar, very narrow, limonite and kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90°.
24.09.11		3.40m at 18:00		100	88	81	8.9	12.52		T2101 13.07					
26.09.11		3.45m at 08:00		100	73	51	12.3	13.76		T2101 14.57	-6.11	13.57		III	Moderately strong, dark grey to brownish grey spotted black and white, moderately decomposed coarse ah TUFF. Joints are closely locally very closely spaced, rough planar, narrow to very narrow, manganese, limonite and kaolin stained, dipping at 10°-20°, 30°-40° and 80°-90°.
				100	54	54	7.9	14.57		T2101 15.33					
				96	81	81	NI	15.33 15.46		T2101 16.13					
							6.0								
				89	89	68	>20	16.13 16.24		T2101 17.27	-9.81	17.27		II	Strong, dark grey spotted black and white, slightly decomposed coarse ash TUFF. Joints are medium to closely spaced, rough planar, very narrow, limonite stained, dipping at 10°-20° and 30°-40°.
							10.9	17.43							
26.09.11		3.40m at 18:00		99	69	39	9.8	17.94		T2101 18.74					
27.09.11		3.60m at 08:00					10.0	18.74							
27.09.11				100	100	78	8.9	19.86		T2101 19.86	-12.40	19.86			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 27.09.11

CHECKED EDWARD CHENG DATE 28.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-020**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR10	E 835,663.97 N 812,176.47	DATE from 23.09.11 to 27.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
															End of drillhole at 19.86m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 27.09.11

CHECKED EDWARD CHENG DATE 28.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-065**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,488.68 N 812,168.73	DATE from 12.10.11 to 14.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.52 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12.10.11	SW	Dry at 08:00													Wash boring.
		Dry at 18:00		100						T2116	+0.97	0.55			Dark grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock and plastic fragments. (FILL)
12.10.11										0.95					
13.10.11		Dry at 08:00		94						T2116					
										1.45	+0.07	1.45			Wash boring.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-065**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,488.68 N 812,168.73	DATE from 12.10.11 to 14.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.52 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							7.9						× ×		As Sheet 1 of 2.
				100	83	76	7.9			T2101			× ×		
								10.77		10.73			× ×		
		4.39m at 18:00		100	75	75	6.2			T2101			× ×	II	
14.10.11								11.57		11.57	-10.05	11.57	× ×		End of drillhole at 11.57m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 14.10.11

CHECKED EDWARD CHENG DATE 15.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503205.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-066**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,477.73 N 812,167.23	DATE from 10.10.11 to 11.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.51 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
10.10.11	PW	Dry at 08:00													Wash boring.
				89						T2116 0.45	+1.06	0.45			Dark grey to brownish grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				65						T2116 0.90 1.10	+0.41	1.10			Wash boring.
	5.00 PW HW	3.25m at 18:00		83	0	0	NI	4.66 4.80		T2101 4.66	-3.15	4.66			Moderately weak to moderately strong, dark pinkish grey spotted black and white, highly to moderately decomposed MONZONITE.
				76	0	0	7.1	5.08 5.16		T2101 4.80	-3.34	4.85		IV/III	
							NR				-3.57	5.08			
				100	0	0	10.3	5.45		T2101 5.16	-3.65	5.16			
							18.2	5.67			-3.94	5.45			4.85- 5.45m: A subvertical rough planar joint, manganese, limonite stained.
10.10.11											-4.16	5.67		III	
11.10.11		4.25m at 08:00		69	0	0	NI	5.80		T2101 5.69	-4.29	5.80			
							NR	5.85			-4.34	5.85		V	5.08- 5.16m: No recovery assumed to be completely decomposed MONZONITE.
				100	0	0	12.8	6.32		T2101					Moderately strong, pinkish grey to greenish grey spotted black and white, moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar to undulating, narrow, chlorite, calcite and manganese stained, dipping at 10°-20° and 70°-80°.
							>20	6.75			6.54				
				100	57	45	9.7	7.37		T2101				III	
							>20	7.57			-5.86	7.37			5.67- 5.80m: Highly fractured.
				100	31	23	3.2			T2101 7.37	-6.06	7.57			No recovery assumed to be completely decomposed MONZONITE.
								8.52			8.14				Moderately strong, dark pinkish grey to yellowish grey spotted black and white, moderately deocmposed MONZONITE. Joints are closely to very closely spaced, rough planar to stepped, very narrow locally narrow, dipping at 10°-20°, 40°-50° and 80°-90°.
				100	32	32	11.4			T2101				II	7.37- 7.57m: Highly fractured.
											9.50				Strong, dark pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are closely locally medium spaced, rough planar, very narrow, chlorite and calcite stained, dipping at 10°-20°.
				100	47	47				T2101	-8.49	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 11.10.11

CHECKED EDWARD CHENG DATE 12.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-066**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,477.73 N 812,167.23	DATE from 10.10.11 to 11.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.51 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11.10.11	10.20 HW	3.73m at 18:00		100	47	47	11.4	10.80		T2101 10.51			× ×		40°-50° and 60°-70°.
				100	61	61	7.4	11.61		T2101 11.50 T2101 11.61			× ×	II	
				100	64	0							× ×		
				100	85	85	3.2	13.15		T2101 13.15	-11.64	13.15	× ×		End of drillhole at 13.15m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 11.10.11

CHECKED EDWARD CHENG DATE 12.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503205.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-068**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,466.66 N 812,174.98	DATE from 03.11.11 to 04.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.37 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.11.11	PW	Dry at 08:00													Wash boring.
	1.50 PW HW							1.85		1.85 T2101 2.30	-0.48	1.85			
				96	96	96	0.0						× × × ×	II	Strong, dark grey spotted black and pink mottled white, slightly decomposed MONZONITE. (CORESTONE)
								2.30			-0.93	2.30			Wash boring, assumed to be completely decomposed MONZONITE.
	5.52 HW							5.52		5.52 T2101 6.59	-4.15	5.52	× × × ×	V	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to closely spaced, smooth planar to undulating, very narrow, kaolin and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
				100	100	100	0.6	7.09							
				100	100	94	10.0 4.4	7.49		8.15 T2101				II	
				99	99	95	0.0	8.39							
				99	63	55	7.1	9.63		9.63 T2101	-8.63	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.11.11

CHECKED EDWARD CHENG DATE 05.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-068**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,466.66 N 812,174.98	DATE from 03.11.11 to 04.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.37 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.11.11		0.79m at 18:00		99	63	55	7.1	10.33		T2101			× ×		As Sheet 1 of 2.
				100	100	100	2.4	10.76		T2101			× ×	II	
04.11.11		1.28m at 08:00		100	89	89	2.9	11.56		T2101			× ×		
04.11.11							13.3	12.26 12.41		12.41	-11.04	12.41			End of drillhole at 12.41m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.11.11

CHECKED EDWARD CHENG DATE 05.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-069**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,467.23 N 812,166.06	DATE from 06.10.11 to 08.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.52 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
06.10.11	SW	Dry at 08:00		100						T2116 0.39–0.79	+1.13	0.39			Wash boring.
				82						T2116 0.79–1.29					Angular COBBLE sized rock, concrete and brick fragments. (FILL)
											+0.23	1.29			Wash boring.
06.10.11		4.35m at 18:00													
07.10.11		3.92m at 08:00						3.71		3.71	-2.19	3.71	× ×		
	4.50 SW			77	77	63	3.0			T2101			× ×	III/II	Moderately strong to strong, grey mottled brown, moderately to slightly decomposed MONZONITE. (CORESTONE)
	5.00 PW							4.87		4.87	-3.35	4.87	× ×		
	HW							5.26		5.26	-3.74	5.26	× ×	V	Wash boring, assumed to be completely decomposed MONZONITE.
				100	0	0	NI	5.48		T2101 5.26–5.48	-3.96	5.48	× ×	IV/III	Moderately weak to moderately strong, greyish brown, highly to moderately decomposed MONZONITE.
										5.48	-4.38	5.90	× ×	III	Strong to very strong, grey spotted white, slightly decomposed MONZONITE. Joints are very widely locally closely spaced, rough planar, very narrow, iron stained, dipping at 10°-20°, 30°-40° and 50°-60°. 5.48- 5.90m: Moderately decomposed MONZONITE.
				99	99	72	9.5			T2101			× ×		
				100	100	65				6.59			× ×		
								7.56		T2101			× ×		
				100	100	100	0.5			7.56			× ×	II	
										T2101			× ×		
										8.99			× ×		
	9.70 HW			100	100	100				T2101			× ×		
											-8.48	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.10.11

CHECKED EDWARD CHENG DATE 09.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-069**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,467.23 N 812,166.06	DATE from 06.10.11 to 08.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.52 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07.10.11		4.30m at 18:00		100	100	100				T2101 10.45			× ×		As Sheet 1 of 2.
08.10.11		4.15m at 08:00		100	100	100	0.5			T2101 11.97	-10.45	11.97	× ×	II	
08.10.11								11.97							End of drillhole at 11.97m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 08.10.11

CHECKED EDWARD CHENG DATE 09.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-071**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR05	E 835,455.65 N 812,173.43	DATE from 31.10.11 to 02.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.34 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples		Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.10.11	HW	Dry at 08:00														Wash boring.
				40						T2101	0.80	+0.54	0.80			
											1.00	+0.34	1.00			Dark grey, angular to subangular COBBLE sized rock fragments. (FILL)
																Wash boring.
31.10.11		0.93m at 18:00														
01.11.11		1.12m at 08:00						3.75			3.75	-2.41	3.75	× ×		
				95	77	66	3.2			T2101				× ×	II	Strong, dark grey spotted white, slightly decomposed MONZONITE. (CORESTONE)
								4.70			4.70	-3.36	4.70	× ×		
								5.21			5.21	-3.87	5.21		V	Wash boring, assumed to be completely decomposed MONZONITE.
				99	96	96	0.8			T2101				× ×	II	Strong, dark grey spotted black and white, slightly decomposed MONZONITE. Joints are widely spaced, rough planar, very narrow, kaolin and limonite stained, dipping at 10°-20°.
								6.43			6.43	-5.09	6.43	× ×		
															V	Wash boring, assumed to be completely decomposed MONZONITE.
								7.50			7.50	-6.16	7.50			
				86	60	60	NI 3.0	7.67		T2101		-6.33	7.67	× ×	III	Moderately strong, dark grey, MONZONITE.
														× ×	II	(CORESTONE)
								8.00			8.00	-6.66	8.00		V	Strong, dark grey spotted black and white, slightly decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, kaolin, manganese and limonite stained, dipping at 20°-30°.
	8.39 HW							8.39			8.39	-7.05	8.39			Wash boring, assumed to be completely decomposed MONZONITE.
				100	78	78	2.8			T2101				× ×	II	Strong, dark grey spotted black and white, slightly decomposed MONZONITE. Joints are medium to closely spaced, rough planar to undulating, very narrow, chlorite, calcite and kaolin stained, dipping at 20°-30°, 50°-60° and 80°-90°.
								9.43			9.43			× ×		
				100	49	49				T2101				× ×		
												-8.66	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.11.11

CHECKED EDWARD CHENG DATE 03.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-071**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,455.65 N 812,173.43	W.O. No.
MACHINE / No. DR05		DATE from 31.10.11 to 02.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.34 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.11.11		0.88m at 18:00		100	49	49	9.6	10.15		T2101			× ×	II	As Sheet 1 of 2.
02.11.11		1.03m at 08:00		100	0	0	>20	10.98		T2101	-9.64	10.98	× ×	II	Strong, dark grey spotted black and white, slightly decomposed MONZONITE, highly fractured with very closely spaced joints and chlorite and kaolin stained.
				96	0	0		11.48		T2101	11.36				
				100	100	100	2.3	12.80		T2101	-10.14	11.48	× ×	II	Strong, dark grey spotted black and white, slightly decomposed MONZONITE. Joints are closely locally widely spaced, rough planar to smooth, very narrow, chlorite, calcite and kaolin stained, dipping at 10°-20°.
				100	86	91	6.8	14.56		T2101	13.30				
02.11.11		0.87m at 18:00									-13.22	14.56			End of drillhole at 14.56m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.11.11

CHECKED EDWARD CHENG DATE 03.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-072**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,457.75 N 812,165.29	W.O. No.
MACHINE / No. DR09		DATE from 30.09.11 to 04.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
30.09.11	PW	Dry at 08:00									+0.83	0.63			Wash boring.
		Dry at 18:00		100						0.63 T2101 1.23					Dark grey to brown, coarse GRAVEL and COBBLE sized rock, wood and metal fragments. (FILL)
30.09.11 03.10.11		Dry at 08:00		76						T2101 1.64	-0.18	1.64			
	4.50 PW HW														Wash boring.
								7.05		7.05	-5.59	7.05			Strong, greenish grey spotted pink and white, slightly decomposed MONZONITE. Joints are widely to closely spaced, smooth planar to rough undulating, chlorite locally kaolin stained, dipping at 10°-20°, 50°-60° and 80°-90°.
				100	100	100	1.4			T2101 8.45					
				100	100	100	1.9	8.45		T2101 9.81				II	
				98	98	98				T2101	-8.54	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.10.11

CHECKED EDWARD CHENG DATE 06.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-072**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,457.75 N 812,165.29	DATE from 30.09.11 to 04.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.10.11	11.40 HW	4.56m at 18:00		98	98	98	1.9	11.05		T2101 11.05			× ×		As Sheet 1 of 2.
				100	83	73	1.4 >20	11.76 11.93		T2101				II	
04.10.11		4.32m at 08:00					8.3	12.53		12.53					
04.10.11				100	100	100	3.8 6.2	13.33 13.98		T2101 13.98	-12.52	13.98			End of drillhole at 13.98m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.10.11

CHECKED EDWARD CHENG DATE 06.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-074**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,447.62 N 812,172.38	DATE from 31.10.11 to 03.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
31.10.11	PW									0.33	+0.99	0.33			Wash boring.
				80						T2116					Angular COBBLE sized rock fragments. (FILL)
		0.82m at 18:00								1.08					
31.10.11	1.50			91						T2101					
01.11.11	PW	0.73m at 08:00								1.32	0.00	1.32			Wash boring.
	HW									1.69	-0.37	1.69			
				86						T2101					Angular COBBLE sized rock fragments. (FILL)
										2.04	-0.72	2.04			Wash boring.
								2.48		2.48	-1.16	2.48			
				25	0	0	NI			T2101			× ×		Moderately strong to strong, grey to light yellowish brown spotted pink, moderately to slightly decomposed MONZONITE. Joints are closely to medium spaced, rough planar, very narrow, iron stained, dipping at 20°-30° and 40°-50°.
								2.87		2.87			× ×		
							0.0						× ×		
				93	93	85	>20	3.35		T2101			× ×		
								3.50					× ×		
										3.87			× ×		
				100	100	30				T2101			× ×	III/II	
													× ×		
							8.2			4.95			× ×		
		0.46m at 18:00		100	100	93				T2101			× ×		
01.11.11													× ×		
02.11.11		0.80m at 08:00								5.64			× ×		
				72	72	30				T2101			× ×		
								6.70					× ×		
							>20	6.98		6.98	-5.66	6.98	× ×		
														V	Wash boring, assumed to be completely decomposed MONZONITE.

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-074**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,447.62 N 812,172.38	DATE from 31.10.11 to 03.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								10.00							As Sheet 1 of 2.
				100	40	40	>20			T2101 10.61				III	
								10.61			-9.53	10.85			
				100	100	89	4.0			T2101					Strong, grey spotted pink, slightly decomposed MONZONITE. Joints are medium to widely locally very closely spaced, rough planar, very narrow, iron stained, clean, dipping at 20°-30°, 40°-50° and 70°-75°.
							>20	11.60 11.73		11.73					
				100	100	73	>20			T2101					
								13.07		13.07				II	
				100	100	100				T2101					
02.11.11		0.57m at 18:03					2.1								
03.11.11		0.32m at 08:00		100	100	100				T2101 14.55					
03.11.11								15.38		15.38	-14.06	15.38			End of drillhole at 15.38m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 03.11.11

CHECKED EDWARD CHENG DATE 04.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503200S.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-080**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,438.48 N 812,171.54	DATE from 28.10.11 to 31.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.25 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples		Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
28.10.11	PW	Dry at 08:00		100						T2101	0.46 0.61	+0.79 +0.64	0.46 0.61			Wash boring. Grey to brownish grey, angular to subangular coarse GRAVEL sized rock fragments. (FILL) Wash boring.
	1.50 PW HW															
		0.47m at 18:00														
28.10.11 29.10.11		0.67m at 08:00									3.16	-1.91	3.16			
				84	0	0				T2101		-2.23	3.48	× ×	IV/III	Moderately weak to moderately strong, brownish grey to pale grey, highly to moderately decomposed MONZONITE.
										T2101	3.84			× ×	III	Moderately strong, dark grey spotted black and pink, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, narrow to very narrow, kaolin and limonite stained, dipping at 40°-50° and 80°-90° at 3.84-3.98m.
				100	0	0					4.11	-2.86	4.11			Wash boring, assumed to be completely decomposed MONZONITE.
															V	
				71	0	0				T2101	8.32	-7.07	8.32			
											8.53	-7.28	8.53	× ×	IV/III	Moderately weak to moderately strong, brownish grey to pale grey, highly to moderately decomposed MONZONITE.
															V	
											9.05	-7.80	9.05			Wash boring, assumed to be completely decomposed MONZONITE.
	9.50 HW			81	0	0				T2101	9.36	-8.11	9.36	× ×	IV/III	Moderately weak to moderately strong, brownish grey to pale grey, highly to moderately decomposed MONZONITE.
				100	0	0	7.1	9.36		T2101		-8.56	9.81	× ×	III	
												-8.75	10.00	× ×	II	Moderately strong, dark grey to brownish grey spotted

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.10.11

CHECKED EDWARD CHENG DATE 01.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503205.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-080**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,438.48 N 812,171.54	DATE from 28.10.11 to 31.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.25 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
29.10.11		0.58m at 18:00		100	76	74	7.1 @ 10.21 4.7 @ 11.28		T2101 10.06–11.28			× ×		black and pink, moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar, very narrow, limonite and manganese stained, dipping at 20°-30° and 80°-90° at 9.36-10.17m and 9.36-9.62m.
				100	95	76	10.3 @ 12.06		T2101 11.28–12.73			× ×		Strong, dark grey spotted pink and black, slightly decomposed MONZONITE. Joints are widely to closely spaced, rough planar, very narrow, limonite and chlorite stained, dipping at 10°-20° and 80°-90° at 10.06-10.21m.
				100	100	97			T2101 12.73–13.84			× ×	II	
31.10.11		0.42m at 08:00		100	100	100	1.6 @ 15.24		T2101 13.84–15.24			× ×		
31.10.11				100	100	100	4.5 @ 15.68		T2101 15.24–15.68	-14.43	15.68	× ×		End of drillhole at 15.68m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.10.11

CHECKED EDWARD CHENG DATE 01.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503205.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-082**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR06	E 835,429.51 N 812,170.21	DATE from 04.11.11 to 07.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.21 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples		Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
04.11.11	HW										0.30	+0.91	0.30			Wash boring.
				55						T2101	0.50	+0.71	0.50			Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
																Wash boring.
04.11.11		0.00m at 18:00														
05.11.11		0.00m at 08:00									4.80	-3.59	4.80			
				76						T2101				× ×		Moderately weak to moderately strong, yellowish grey to grey spotted black, highly to moderately decomposed MONZONITE.
				45						T2101	5.30			× ×	IV/III	
											5.50	-4.29	5.50	× ×		Wash boring, assumed to be completely decomposed MONZONITE.
	9.00 HW														V	
				95	0	0	11.7	9.00		T2101	9.00	-7.79	9.00	× ×		
											9.22			× ×		Moderately strong, dark grey to brownish grey, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, narrow, manganese and limonite stained, dipping at 60°-70° and 70°-80°.
				98	0	0				T2101				× ×	III	
				96	19	0	6.2	9.77		T2101	9.77	-8.56	9.77	× ×		
												-8.79	10.00	× ×	II	Strong, dark pinkish grey spotted black and white,

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 07.11.11

CHECKED EDWARD CHENG DATE 08.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503205.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-082**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR06	E 835,429.51 N 812,170.21	DATE from 04.11.11 to 07.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.21 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				96	19	0	6.2	10.25		T2101 10.25					slightly decomposed MONZONITE. Joints are medium to closely spaced, smooth planar, very narrow, kaolin and chlorite stained, dipping at 10°-20°, 60°-70° and 80°-90°.
							2.6								
				100	92	82		11.02		T2101					
							9.2								
				97	69	47	2.9	11.67		T2101 11.67					
								12.02		T2101 11.99					
				99	67	46	9.8							II	
										T2101 13.25					
				100	0	0	15.0	13.25		T2101 13.45					
		0.00m at 18:00		99	77	57	2.6	13.45		T2101					
							12.9	13.84							
05.11.11								14.15		T2101 14.15					
07.11.11		0.00m at 08:00													
				99	74	71	3.4			T2101	-13.68	14.89			Strong, dark grey mottled pink and white, slightly decomposed MONZONITE. Joints are closely spaced, smooth undulating, very narrow, chlorite locally kaolin stained, dipping at 70°-80° and 80°-90°.
								15.60		T2101 15.60	-14.39	15.60		II	
											-14.43	15.64			15.60- 15.64m: Quartz vein.
		0.00m at 18:00		100	21	21	10.3			T2101					
07.11.11								16.47		16.47	-15.26	16.47			End of drillhole at 16.47m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 07.11.11

CHECKED EDWARD CHENG DATE 08.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-088**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,419.69 N 812,168.52	DATE from 26.10.11 to 28.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.10.11	PW	Dry at 08:00		87						0.34	+0.82	0.34			Wash boring.
										T2101 0.64					Brownish grey to dark grey, angular to subangular COBBLE and BOULDER sized rock fragments. (FILL)
				71						T2101					
	1.50 PW									1.49	-0.33	1.49			
	HW														Wash boring.
								9.32		9.32	-8.16	9.32	× ×	IV/III	Moderately weak to moderately strong, yellowish grey to brownish grey spotted pink and grey, highly to moderately decomposed MONZONITE.
				79	0	0	NI	9.58		T2101 9.74	-8.58	9.74	× ×		
				100	85	85	18.2	9.91		T2101	-8.84	10.00	× ×	II	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.10.11

CHECKED EDWARD CHENG DATE 29.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-088**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,419.69 N 812,168.52	DATE from 26.10.11 to 28.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
	10.50 HW			100	85	85	4.9 4.9	10.94		T2101 10.84	-9.78	10.94			Strong, dark grey spotted pink spotted black, slightly decomposed MONZONITE. Joints are medium to closely locally very closely spaced, smooth planar, very narrow, kaolin and manganese stained, dipping at 10°-20°, 20°-30°, 60°-70° and 80°-90° at 14.33-14.58m.
											-9.96	11.12			10.94- 11.12m: Slightly decomposed TUFF.
				100	86	80	1.8	12.04		T2101					
							15.0	12.24		12.24					
26.10.11		0.85m at 18:00		99	99	93				T2101 12.95				II	
27.10.11		0.66m at 08:00		100	100	93	5.2	13.98		T2101					
							11.4	14.33		14.33					
27.10.11		0.71m at 18:00		98	34	34	12.2	14.74		T2101 14.74					
28.10.11		0.62m at 08:00		100	100	85	8.8			T2101					
28.10.11								15.76		15.76	-14.60	15.76			End of drillhole at 15.76m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 28.10.11

CHECKED EDWARD CHENG DATE 29.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-091**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,410.13 N 812,166.58	DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	PW	Dry at 08:00									+0.77	0.39			Wash boring.
				78						0.39 T2116 0.99					Dark grey to brownish grey, coarse GRAVEL, COBBLE and BOULDER sized rock and wood fragments. (FILL)
				67						T2116 1.29					
	1.50 PW / HW			41						T2116 2.62	-1.46	2.62			
															Wash boring.
										5.61	-4.45	5.61			
				87	54	54				T2101 6.07	-4.66	5.82			Dark grey to brownish grey, coarse GRAVEL, COBBLE and BOULDER sized rock and wood fragments. (FILL)
				100	83	83				T2101 6.87	-5.71	6.87	× × × × × × × ×	II	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to closely spaced, rough planar, narrow to very narrow, manganese and limonite stained, dipping at 30°-40° and 40°-50°.
		1.38m									-8.84	10.00		V	Wash boring, assumed to be completely decomposed MONZONITE.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/NRW-091**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,410.13 N 812,166.58	W.O. No.
MACHINE / No. DR09		DATE from 24.10.11 to 25.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.16 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.10.11	10.33 HW	at 18:00												V	As Sheet 1 of 2.
25.10.11		1.12m at 08:00		82	0	0	NI	10.33			-9.17	10.33		IV/III	Moderately weak to moderately strong, dark grey to brownish grey, highly to moderately decomposed MONZONITE. Joints are closely to very closely spaced, rough planar, narrow, manganese and limonite stained, dipping at 10°-20° and 50°-60°.
							15.4	10.57		T2101					
							NR	10.96			-9.80	10.96		V	
								11.10			-9.94	11.10			No recovery assumed to be completely decomposed MONZONITE.
				100	31	31				T2101	11.10				
							9.3				11.52			III	Moderately strong, dark grey to yellowish grey spotted black and pink, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, limonite and manganese stained, dipping at 10°-20°, 30°-40° and 80°-90° at 11.20-11.46m and 11.52-11.81m.
				94	34	34		11.96		T2101					
											12.40				
							5.0				-11.24	12.40		II	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to closely spaced, smooth planar locally rough undulating, limonite and chlorite locally kaolin stained, dipping at 10°-20° and 40°-50°.
				99	85	69				T2101					
							>20	13.35 13.47			-12.19 -12.31	13.35 13.47		III	
							8.8				13.84				13.35- 13.47m: Moderately strong and moderately decomposed MONZONITE.
				100	87	87		14.15		T2101					
							3.3				14.84				
				99	99	99		15.38		T2101				II	
							0.9				16.29				
				100	98	98				T2101					
25.10.11		0.58m at 18:00						17.57			17.57 -16.41	17.57			End of drillhole at 17.57m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 25.10.11

CHECKED EDWARD CHENG DATE 26.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

F76-061125

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-014**

SHEET 1 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR20	E 835,653.97 N 812,176.49	DATE from 23.08.11 to 26.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.59 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
23.08.11	PW	Dry at 08:00		24						T2101 0.00					Yellowish grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				45						T2101 1.25					
										2.10	+5.49	2.10			Wash boring.
	4.70 PW HW									4.70	+2.89	4.70			Yellowish grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
		2.92m at 18:00		50						T2101 5.70	+1.89	5.70			
23.08.11				80						5.80	+1.79	5.80			Wash boring.
24.08.11		3.01m at 08:00								T2101 6.10					Yellowish grey to brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				33						T2101 7.00	+0.59	7.00			Wash boring.
											-2.41	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.08.11

CHECKED EDWARD CHENG DATE 27.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-014**

SHEET 2 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES E 835,653.97 N 812,176.49	W.O. No.
MACHINE / No. DR20		DATE from 23.08.11 to 26.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.59 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
	10.26 HW							10.26		10.26	-2.67	10.26			As Sheet 1 of 3.
							>20	10.65			-3.06	10.65		IV	Moderately weak, yellowish brown to pale grey, highly decomposed coarse ash TUFF, highly fractured.
				98	55	50	9.2			T2101					Moderately strong, brownish grey to yellowish grey spotted black and white, moderately decomposed coarse ash TUFF. Joints are closely to very closely spaced, rough planar to undulating, narrow to moderately narrow, limonite, manganese and kaolin stained, dipping at 10°-20°, 30°-40°, 50°-60° and 80°-90°.
				100	61	41		12.06		11.56				III	
				100	65	54	13.6	13.16		T2101 12.49					
				100	94	78	12.2	14.06		T2101 13.30	-5.71	13.30			Strong, dark grey spotted black, slightly decomposed coarse ash TUFF. Joints are closely to medium spaced, rough planar, very narrow, limonite, chlorite and locally kaolin stained, dipping at 10°-20°, 50°-60°, 70°-80° and 80°-90°.
		2.90m at 18:00		98	82	82	6.1			T2101 14.64					
24.08.11							16.7	15.20		T2101 15.25					
25.08.11		3.11m at 08:00		100	67	67		15.38		T2101 15.64					
				100	93	83	6.8			T2101 16.88				II	
				98	72	64	7.9	17.44		T2101 18.06					
				100	84	71		18.20		T2101 18.55					
				100	98	90	8.4			T2101					
25.08.11		2.98m at 18:00									-12.41	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.08.11

CHECKED EDWARD CHENG DATE 27.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_2503205.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/VDC-014**

SHEET 3 of 3

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR20	E 835,653.97 N 812,176.49	DATE from 23.08.11 to 26.08.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +7.59 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.08.11		3.07m at 08:00						19.98		19.98					As Sheet 2 of 3.
				100	100	100				T2101					
							5.4			21.47					
				100	100	68				T2101					
										22.48					
				99	99	86		23.29		T2101				II	
							4.0								
								24.04		24.04					
				100	93	93	6.7			T2101					
								25.54		25.54					
				100	100	95	3.2			T2101					
26.08.11		2.99m at 18:00						26.80		26.80	-19.21	26.80			End of drillhole at 26.80m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.08.11

CHECKED EDWARD CHENG DATE 27.08.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 18.2.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-051**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR22	E 835,458.74 N 812,171.36	DATE from 25.10.11 to 26.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.42 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
25.10.11	PW														Wash boring.
25.10.11	4.79 PW	0.00m at 18:00													
26.10.11	HW	0.00m at 08:00		73				4.90		T2101	4.79 -3.37 4.90 -3.48	4.79 4.90			Dark grey, angular to subangular coarse GRAVEL sized rock fragments. (FILL)
	6.35 HW			100	100	100	1.7			T2101	6.35				Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to medium spaced, rough planar, very narrow, limonite stained, dipping at 10°-20°, 40°-50°, 60°-70° and 80°-90°.
				100	100	95	6.7	7.28		T2101	7.88			II	
				100	96	91	3.7	8.95		T2101	9.42				
				100	78	10	9.3 16.1	9.70		T2101	-8.58	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.10.11

CHECKED EDWARD CHENG DATE 27.10.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-051**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR22	E 835,458.74 N 812,171.36	DATE from 25.10.11 to 26.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.42 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26.10.11		0.00m at 18:00		100	78	10	4.2	10.01 10.73		T2101 10.91			× ×	II	As Sheet 1 of 2.
				100	75	75	4.6	12.24		T2101 12.24			× ×		
				100	68	68	8.3 2.6	12.60 13.36		T2101 13.36	-11.94	13.36	× ×		End of drillhole at 13.36m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.10.11

CHECKED EDWARD CHENG DATE 27.10.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-054**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,470.00 N 812,172.87	DATE from 28.10.11 to 31.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
28.10.11	PW	Dry at 08:00									+1.46	0.00			Wash boring.
				64						0.65 T2101 1.20	+0.81	0.65			Yellowish brown to yellowish grey, angular to subangular coarse GRAVEL, COBBLE and BOULDER sized concrete fragments. (FILL)
											+0.26	1.20			Wash boring.
	4.50 PW										-3.04	4.50			
	HW			67	0	0				4.50 T2101 5.10	-3.64	5.10		IV/III	Moderately weak to moderately strong, brownish grey to grey spotted black, highly to moderately decomposed MONZONITE.
28.10.11		0.00m at 18:00									-4.04	5.50		V	Wash boring, assumed to be completely decomposed MONZONITE.
29.10.11	6.10 HW	0.00m at 08:00		98	93	93	3.3	5.50 6.10		5.50 T2101 6.10					Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are widely to medium spaced, rough planar to undulating, very narrow, limonite and kaolin stained, dipping at 10°-20° and 30°-40°.
				100	100	100	0.6			T2101 7.64					
				100	100	97	5.6	7.89		T2101 9.19				II	
				100	100	100	0.6	9.31		T2101	-8.54	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.10.11

CHECKED EDWARD CHENG DATE 01.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-054**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR12	E 835,470.00 N 812,172.87	DATE from 28.10.11 to 31.10.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
29.10.11 31.10.11		0.00m at 18:00 0.00m at 08:00		100 100 100	100 100 100	100 100 100	0.6 0.0	10.87 12.70		T2101 10.75 T2101 12.02 T2101 12.70	-11.24	12.70	× ×	II	As Sheet 1 of 2. End of drillhole at 12.70m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 31.10.11

CHECKED EDWARD CHENG DATE 01.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-057**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,479.83 N 812,174.20	DATE from 01.11.11 to 02.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples		Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.11.11	PW	0.00m at 08:00														Wash boring.
								3.05		T2116	3.05	-1.59	3.05			
				60	0	0	NI							× × × × × ×	IV	Moderately weak, pinkish brown spotted black and white, highly decomposed MONZONITE.
	3.80 PW							3.80			3.80	-2.34	3.80	× ×		
	HW														V	Wash boring, assumed to be completely decomposed MONZONITE.
	4.42 HW							4.25		T2116	4.25	-2.79	4.25			
				53	0	0	NI	4.42			4.42	-2.96	4.42	× ×	IV/III	Moderately weak to moderately strong, pinkish brown to brownish grey spotted white and black, highly to moderately decomposed MONZONITE.
							>20	4.64						× ×		Strong, dark pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are closely to widely spaced, rough planar, very narrow locally narrow, chlorite and limonite stained, dipping at 10°-20°, 50°-60° and 80°-90°.
				100	32	23	10.3	4.93		T2101				× ×		
							>20	5.32			5.32			× ×		
							8.2	5.60						× ×		
				99	93	81	1.4			T2101				× ×		
											6.88			× ×		
				99	54	48				T2101		-5.91	7.37	× ×	II	
							10.7	7.44				-5.96	7.42	× ×		7.37- 7.42m: Quartz vein.
								8.00			7.80			× ×		
				100	78	64	7.0			T2101				× ×		
								9.14			9.14			× ×		
				100	85	74	1.7			T2101				× ×		
							10.1	9.72				-8.54	10.00	× ×		

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.11.11

CHECKED EDWARD CHENG DATE 03.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-057**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,479.83 N 812,174.20	DATE from 01.11.11 to 02.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.46 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
01.11.11 02.11.11		0.00m at 18:00		100	85	74	10.1	10.51		T2101 10.51			× ×		As Sheet 1 of 2.
		0.00m at 08:00		100	100	100	1.3	12.06		T2101 12.06			× ×	II	
02.11.11		0.00m at 18:00		100	100	100	0.0	13.41		T2101 13.41	-11.95	13.41	× ×		End of drillhole at 13.41m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 02.11.11

CHECKED EDWARD CHENG DATE 03.11.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-060**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,490.21 N 812,175.58	DATE from 02.11.11 to 04.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.47 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
02.11.11	PW	Dry at 08:00									+0.87	0.60			Wash boring.
				45						0.60 T2116 1.15	+0.32	1.15			Dark grey, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
	3.03 PW														Wash boring.
	HW							3.03			-1.56	3.03			
		0.00m at 18:00		82	0	0	NI			3.03 T2116			× × × × × ×	IV/III	Moderately weak to moderately strong, yellowish grey to grey spotted black and white, highly to moderately decomposed MONZONITE.
	4.12 HW						>20	3.76 3.92			-2.29 -2.45	3.76 3.92	× ×	III	Moderately strong, yellowish grey to grey spotted black and pink, moderately decomposed MONZONITE. Joints are very closely to closely spaced, rough planar, narrow to very narrow, limonite locally kaolin stained, dipping at 10°-20° and 80°-90°.
02.11.11							NR	4.12			-2.65	4.12		V	No recovery assumed to be completely decomposed MONZONITE.
03.11.11		0.00m at 08:00		99	21	18	12.5			4.12 T2101			× × × × × ×	II	Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are closely spaced, rough planar, very narrow, manganese and limonite stained, dipping at 10°-20° and 80°-90°.
							6.8	4.84 5.28		4.84 T2101	-3.37 -3.81	4.84 5.28	× × × × × ×	III	Moderately strong, pinkish brown spotted white, moderately decomposed MONZONITE. Joints are closely spaced, rough undulating, very narrow, limonite and manganese stained, dipping at 50°-60° and 60°-70°.
				99	66	55	4.2						× × × × × ×		Strong, dark grey spotted black and pink, slightly decomposed MONZONITE. Joints are closely to medium spaced, rough planar locally smooth, dipping at 10°-20°, 40°-50° and 80°-90°.
							10.0	6.00 6.40		6.40 T2101			× × × × × ×		
				100	79	75	4.7						× × × × × ×	II	
							>20	7.90 8.16		7.90 T2101			× × × × × ×		
				100	69	39	6.0	8.66					× × × × × ×		
							3.8			9.26 T2101			× × × × × ×		
				100	0	0					-8.53	10.00	× ×		

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.11.11

CHECKED EDWARD CHENG DATE 05.11.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-060**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	W.O. No.
MACHINE / No. DR09	E 835,490.21 N 812,175.58	DATE from 02.11.11 to 04.11.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.47 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
03.11.11		0.00m at 18:00		100	72	72	>20 5.0	9.98 10.16		T2101 10.16 T2101 10.88			× ×		As Sheet 1 of 2.
				100	46	46	18.5 8.6	11.56 11.83 12.41		T2101 12.41			× ×	II	
				100	100	92	4.7	13.27		T2101 13.27	-11.80	13.27	× ×		End of drillhole at 13.27m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 04.11.11

CHECKED EDWARD CHENG DATE 05.11.11

REMARKS

DRILLHOLE LOG J1105506 - MTRC 903.GPJ TYSAN_25032005.GDT 14.1.12

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-042**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,426.40 N 812,162.15	DATE from 24.09.11 to 26.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.38 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
24.09.11	PW	Dry at 08:00									+0.98	0.40			Wash boring.
				100						0.40 T2101 0.80					Dark grey to greenish brown, angular to subangular coarse GRAVEL and COBBLE sized rock fragments. (FILL)
				83						T2101 1.10					
				75						T2101 1.70	-0.32	1.70			Wash boring.
								3.50		3.50	-2.12	3.50	× ×		
				89	0	0	NI			T2101			× ×	IV	Moderately weak, pinkish brown, highly decomposed MONZONITE. (Dense, fine to coarse SAND with subangular coarse gravel and cobble sized rock fragments)
	5.00 PW HW							3.95		3.95	-2.57	3.95			Wash boring, assumed to be completely decomposed MONZONITE.
														V	
				100	0	0	NI	9.75 9.90		9.75 T2101 9.90 T2101	-8.37 -8.52	9.75 9.90	× ×	IV	Moderately weak, pinkish brown, highly decomposed

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 24.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.09.11

CHECKED EDWARD CHENG DATE 27.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-042**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,426.40 N 812,162.15	DATE from 24.09.11 to 26.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.38 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				99	95	90	13.1	10.51		T2101				III	MONZONITE. (Dense, fine to coarse SAND with subangular coarse gravel and cobble sized rock fragments)
							2.0	11.53		11.18					Moderately strong, dark grey to brownish grey spotted pink and black, moderately decomposed MONZONITE. Joints are closely to medium locally very closely spaced, rough planar, very narrow to narrow, chlorite, manganese, limonite locally kaolin stained, dipping at 10°-20°.
				100	76	63	19.4	11.89		T2101	-10.52	11.90			
24.09.11		4.46m at 18:00					5.9	12.74		12.67					Strong, dark pinkish grey spotted black and white, slightly decomposed MONZONITE. Joints are medium to widely spaced, rough planar to undulating, narrow to very narrow, chlorite and kaolin stained, dipping at 10°-20°, 40°-50° and 80°-90°.
26.09.11		3.25m at 08:00		99	93	87	3.6	14.11		T2101					
	14.50 HW									13.89				II	
				99	99	99	0.0	15.27		T2101					
										15.27					
26.09.11		3.07m at 18:00		100	100	95	3.1	16.56		T2101	-15.18	16.56			
										16.56					End of drillhole at 16.56m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 26.09.11

CHECKED EDWARD CHENG DATE 27.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 24.12.11

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-045**

SHEET 1 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,436.72 N 812,163.57	DATE from 22.09.11 to 23.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I. / Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
22.09.11	PW	Dry at 08:00		90						0.31 T2101	+1.08	0.31			Wash boring.
				80						0.81 T2101					Dark grey, angular coarse GRAVEL, COBBLE and occasional boulder sized rock fragments. (FILL)
	5.00 PW HW									1.31	+0.08	1.31			Wash boring.
22.09.11		4.46m at 18:00													
23.09.11		3.72m at 08:00		100	89	89	5.3	9.44		9.44 T2101	-8.05	9.44	× ×	III	Moderately strong, brownish grey to grey spotted pink and white, moderately decomposed MONZONITE. Joints are closely spaced, rough planar, narrow to
											-8.48	9.87	× ×		
											-8.61	10.00		II	

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN 25032005.GDT 24.12.11

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.09.11

CHECKED EDWARD CHENG DATE 24.09.11

REMARKS

Tysan Geotechnical Limited 泰昇土力工程有限公司

DRILLHOLE RECORD

CONTRACT No. 903

HOLE No. **PD/WCH-045**

SHEET 2 of 2

PROJECT MTR South Island Line (East) Contract 903, Ocean Park Station, Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge

METHOD RC	CO-ORDINATES	JOB No. J1105S06
MACHINE / No. DR09	E 835,436.72 N 812,163.57	DATE from 22.09.11 to 23.09.11
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +1.39 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	F.I./ Test Depth	Tests	Samples	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	89	89	5.3	10.58		T2101 10.58				II	very narrow, limonite and manganese stained, dipping at 10°-20° and 80°-90°. Strong, dark grey to pinkish grey spotted white and black, slightly decomposed MONZONITE. Joints are medium to closely spaced, rough planar, very narrow locally moderately narrow, kaolin and calcite stained, dipping 10°-20° and 80°-90°.
				100	92	75	5.7	11.45		T2101 11.88	-10.03	11.42		III	
							18.8	11.77			-10.37	11.76			11.42- 11.76m: Moderately strong, greenish grey spotted pink and moderately decomposed MONZONITE.
				100	100	100	3.2	13.97		T2101 13.37				II	
	13.60 HW			99	99	81	>20	14.23		T2101 14.81	-12.58	13.97		III	
							3.4	14.81			-12.84	14.23			13.97- 14.23m: Moderately strong, greenish grey spotted pink and moderately decomposed MONZONITE.
							9.1	15.14						II	
23.09.11		3.68m at 18:00		100	100	90	2.8	15.86		T2101 15.86	-14.47	15.86			End of drillhole at 15.86m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Water Level
- Standard Penetration Test
- Permeability Test
- Impression Packer Test
- Standpipe/Piezometer Tip
- In-situ Vane Shear Test
- Point Load Test

LOGGED S.O. CHAN DATE 23.09.11

CHECKED EDWARD CHENG DATE 24.09.11

REMARKS

DRILLHOLE LOG J1105S06 - MTRC 903.GPJ TYSAN_25032005.GDT 24.12.11