

APPENDIX 'A'

SOILS INVESTIGATION

Project No: 05-5392

Log of Borehole: TP1

Project: Brookside Cemetary Site Expansion

Client: The City of Winnipeg

Inspector: HLF



SUBSURFACE PROFILE			SAMPLE			VOC Concentration		Well Data	Remarks				
Depth, m	Symbol	Description	Depth/Elev.	Number	Type	Recovery	%LEL						
							20	40	60	80			
							100	300	500	700	900		
0		Ground Surface	0										
1		Silty Clay Fill Some organics; brown and black, loose											Hole backfilled w/ material removed
2			-2.3										
3		Clay Some silt; trace gravel, brownish grey; dense; stiff; high plasticity -Brown clay at 3.66 m below grade											
4		End of Borehole	-3.81										

Drilled By: City of Winnipeg

Drill Method: Testpit by a backhoe

Drill Date: November 23, 2005

Hole Size: NA

Dillon Consulting Limited
200 - 895 Waverley St.
Winnipeg, Manitoba
R3T 5P4

Datum:

Ground Elevation

Well Top Elevation

Sheet: 1 of 1

Project No: 05-5392

Log of Borehole: TP2

Project: Brookside Cemetary Site Expansion

Client: The City of Winnipeg

Inspector: HLF



SUBSURFACE PROFILE				SAMPLE			VOC Concentration %LEL 20 40 60 80 ppm 100 300 500 700 900	Well Data	Remarks
Depth, m	Symbol	Description	Depth/Elev.	Number	Type	Recovery			
0		Ground Surface	0						
1		Silty Clay Fill Some organics; brown, grey and black, loose; dry						Hole backfilled w/ material removed	
2			-2.3						
3		Clay Fill material; some silt and gravel; trace gravel, brownish grey; dense; stiff; high plasticity -grey natural clay at 3 m below grade							
4			-4.27						
		End of Borehole							

Drilled By: City of Winnipeg

Drill Method: Testpit by a backhoe

Drill Date: November 23, 2005

Hole Size: NA

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Winnipeg, Manitoba
R3T 5P4

Datum:

Ground Elevation

Well Top Elevation

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Project No: 05-5392

Log of Borehole: TP3

Project: Brookside Cemetary Site Expansion

Client: The City of Winnipeg

Inspector: HLF



SUBSURFACE PROFILE				SAMPLE			VOC Concentration		Well Data	Remarks
Depth, m	Symbol	Description	Depth/Elev.	Number	Type	Recovery	%LEL			
							20	40 60 80		
							100	300 ppm 500 700 900		
0		Ground Surface	0							
1		Silty Clay Fill Some topsoil and organics; black and brown, loose; dry -At 0.91 m below grade becomes grey and black; trace topsoil; stiff; dense								Hole backfilled w/ material removed
2			-2.44							
3		Clay Some silt; trace pebbles; brownish grey; dense; stiff; high plasticity								
			-3.66							
4		End of Borehole								

Drilled By: City of Winnipeg

Drill Method: Testpit by a backhoe

Drill Date: November 23, 2005

Hole Size: NA

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200 - 895 Waverley St.
Winnipeg, Manitoba
R3T 5P4

Datum:

Ground Elevation

Well Top Elevation

Sheet: 1 of 1

Project No: 05-5392

Log of Borehole: TP4

Project: Brookside Cemetary Site Expansion

Client: The City of Winnipeg

Inspector: HLF



SUBSURFACE PROFILE				SAMPLE			VOC Concentration %LEL 20 40 60 80 ppm 100 300 500 700 900	Well Data	Remarks
Depth, m	Symbol	Description	Depth/Elev.	Number	Type	Recovery			
0		Ground Surface	0						
1		<p>Silty Clay Fill Some topsoil and organics; black and brown, loose; dry -At 0.61 m below grade becomes greyish brown silty clay fill; trace pebbles; stiff; dense; high plasticity; dry</p>						Hole backfilled w/ material removed	
2			-2.59						
3		<p>Clay Trace silt; brownish grey; dense; stiff; high plasticity; moist</p>							
4		End of Borehole	-3.96						

Drilled By: City of Winnipeg

Drill Method: Testpit by a backhoe

Drill Date: November 23, 2005

Hole Size: NA

Dillon Consulting Limited
200 - 895 Waverley St.
Winnipeg, Manitoba
R3T 5P4

Datum:

Ground Elevation

Well Top Elevation

Sheet: 1 of 1

Project No: 05-5392

Log of Borehole: TP5

Project: Brookside Cemetary Site Expansion

Client: The City of Winnipeg

Inspector: HLF



SUBSURFACE PROFILE				SAMPLE			VOC Concentration		Well Data	Remarks
Depth, m	Symbol	Description	Depth/Elev.	Number	Type	Recovery	%LEL			
							20	40 60 80		
							100	300 500 700 900		
0		Ground Surface	0							
1		<p>Silty Clay Fill Some topsoil and organics; black and grey, loose; dry -At 0.76 m below grade becomes greyish brown silty clay fill; trace pebbles; stiff; dense; high plasticity; dry</p>								Hole backfilled w/ material removed
2			-2.44							
3		<p>Clay Trace silt and pebbles; greyish brown; dense; stiff; high plasticity; moist</p>								
			-3.66							
		End of Borehole								

Drilled By: City of Winnipeg

Drill Method: Testpit by a backhoe

Drill Date: November 23, 2005

Hole Size: NA

Dillon Consulting Limited
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Winnipeg, Manitoba
R3T 5P4

Datum:

Ground Elevation

Well Top Elevation

Sheet: 1 of 1

**TABLE 1
BROOKSIDE CEMETERY, 055-392
PLASTICITY INDEX TEST DATA**

Sample Identification	Liquid Limit	Plastic Limit	Plasticity Index	% Retained on 0.425 mm Sieve
TP1 - 7"	91	24	67	1.1
TP3 - 11"	76	18	58	1.9

Notes:

1. Test conducted in accordance with ASTM D4318 Method B (single point liquid limit).
2. Sample was air-dried during sample preparation.

**TABLE 2
BROOKSIDE CEMETERY, 055-392
PARTICLE SIZE ANALYSIS TEST DATA**

Sample Identification	Gravel, % 75 to 4.75 mm	Sand, %			Silt, % <0.075 to 0.005 mm	Clay, % < 0.005 mm	Colloids, % < 0.001 mm
		Coarse <4.75 to 2.0 mm	Medium <2.0 to 0.425 mm	Fine <0.425 to 0.075 mm			
TP1 - 7"	0.0	0.0	1.1	4.9	1.1	92.9	87.3
TP3 - 11"	0.7	0.4	0.8	2.3	19.2	76.6	52.5

Notes:

1. Test conducted in accordance with ASTM D422.
2. A high speed stirring device was used for 1 minute to disperse the test sample.
3. The percentage of colloids is also included in the clay size fraction.