Template Version: C420110321 - RW

APPENDIX 'A' GEOTECHNICAL REPORT

Template Version: C420110321 - RW

APPENDIX 'A' - GEOTECHNICAL REPORT

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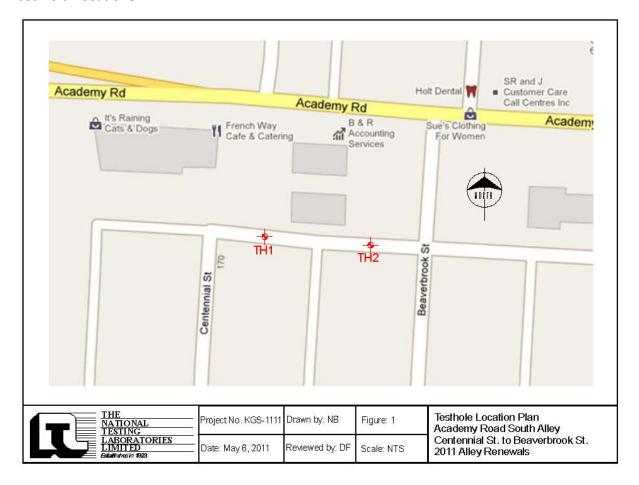
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The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

Geotechnical Report for Academy Road South Alley

Test Hole Locations



Summary of Core Samples

Academy Road South Alley Centennial Street to Beaverbrook Street

| -1-11- | | Paveme | Pavement Surface | Pavement 5 | Pavement Structure Material | - | Sample | Moisture | Part | Particle Size Analysis | Analysis | • | At | Atterberg Lir | l Limits |
|--------------|--|----------|-------------------|------------|-----------------------------|-------------|--------------|-----------------------------|---------------|------------------------|-------------|-------------|-----------------|------------------|---------------------|
| ESUTOR ID | Testhole Location | Туре | Thickness (mm) | Type | Thickness (mm) | Description | Depth (m) | Content Gravel Sand (%) (%) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | Liquid Limit | Plastic Limit | Plasticity Index |
| TH1 | 21 m east of Centennial Street 1 m from north side of alley | Concrete | 205 | Clay Fill | 962 | Clay Fill | 9.0 | 35 | 3.7 | 19.2 | 30.2 | 46.9 | 64 | 21 | 43 |
| TH2 | 47 m east of Centennial Street 1 m from north side of alley | Concrete | 190 | Clay Fill | 1010 | ř. | C | Ē | 9 | i e | ë | | 6 | n | n |

Test Hole Log #1 for Academy Road South Alley

TESTHOLE TH1

Project Name: 2011 Alley Renewals Client: KGS Group Site: Academy Road South Alley, Centennial St. to Beaverbrook St. Date Drilled: April 25, 2011
Depth of Testhole: 2.1 m
Logged by: Hilario Presado

| | | Subsurface Profile | | | | Lak | oratory ⁻ | Γestin | g | | |
|---------------------|-----------|--|---------|----------------|---------------|------------------|----------------------|------------|----------|----------|----------|
| Depth (m) | Symbol | Description | PL 0 | Wat | er Co | ntent | (%) 止 80 100 | Gravel (%) | Sand (%) | Silt (%) | Clay (%) |
| | | Ground Surface | ╫ | | | | | - | 0) | 0) | _ |
| -0.0 | 3 9 9 9 9 | Concrete - good condition | | | | | | | | | |
| - - 0.5- - | | Clay Fill - black, firm, moist, high plasticity - trace organic material - some sand and gravel | | 18 | 35 | | | 3.7 | 19.2 | 30.2 | 46 |
| - - 1.0- - | | | | | \ 41 40 | | | | | | |
| 1.5- - - | | Clay - brown, firm, moist, high plasticity | | | 41 | | | | | | |
| 2.0- | | | | | 43 | | | | | | |
| - - 2.5- | | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | | | | | | | | |

Test Hole Log #2 for Academy Road South Alley

TESTHOLE TH2

Project Name: 2011 Alley Renewals Client: KGS Group Site: Academy Road South Alley, Centennial St. to Beaverbrook St. Date Drilled: April 25, 2011
Depth of Testhole: 2.1 m
Logged by: Hilario Presado

| | | Subsurface Profile | Laboratory Testing |
|--------------|--------|--|---|
| Depth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 100 |
| | | Ground Surface | |
| 0.0- | 22.02 | Concrete - good condition | |
| -0.5 | | Clay Fill - black, firm, moist, high plasticity - some organic material | 31 |
| | | | 45 38 |
| 1.0- | | | 36 |
| 1.5- - | | Clay - brown, firm, moist, high plasticity | 339 |
| 2.0- | | | 46 |
| 2.5- | - | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | |

Pavement Core Photos



ACADEMY ROAD SOUTH ALLEY CENTENNIAL STREET TO BEAVERBROOK STREET



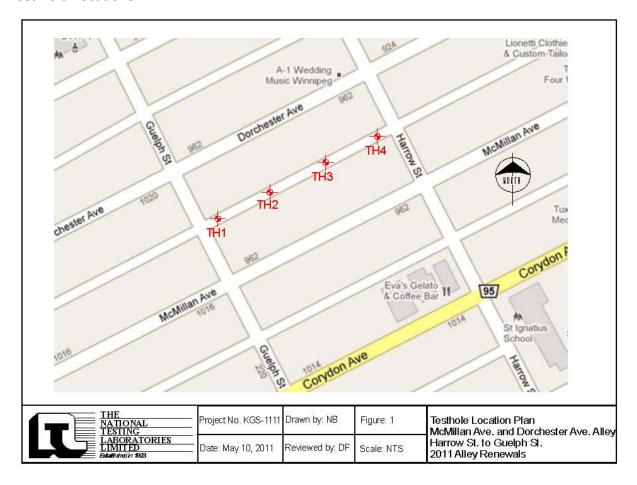
Core sample from Testhole TH1



Core sample from Testhole TH2

Geotechnical Report for Dorchester Ave. / McMillan Ave. Alley

Test Hole Locations

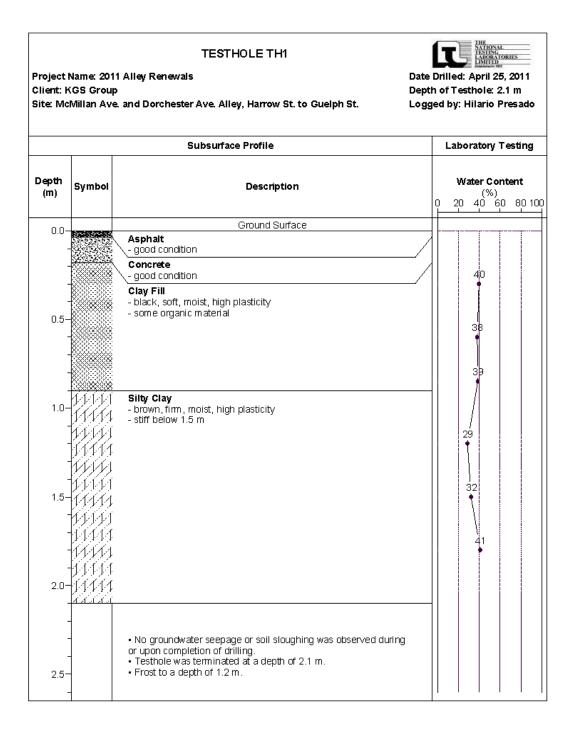


Summary of Core Samples

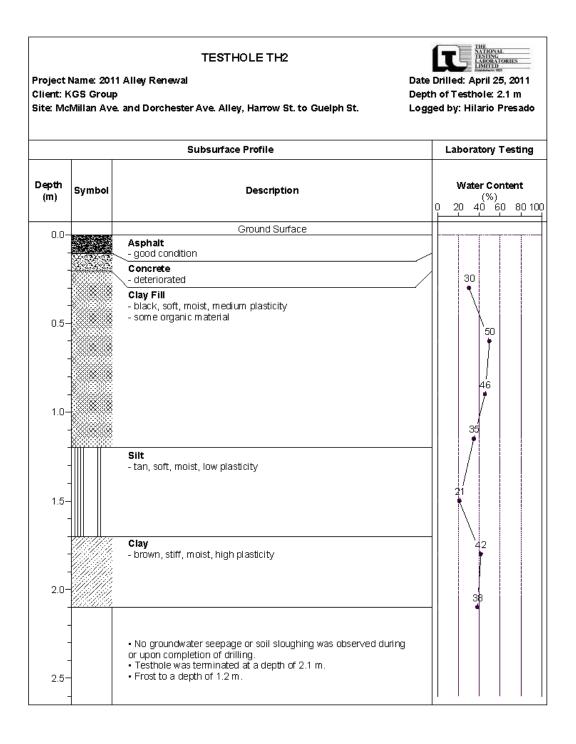
McMillan Avenue and Dorchester Avenue Alley Harrow Street to Guelph Street

| olesher. | | Lavellle | III sullace | Lavelliell ; | Pavement surface Pavement su uctule material | O manual o | Sallible | Sample Moisture Particle Size Arialysis | Ē | CIE SIZE | HIGHYSIS | • | MIC | Attended y Cillins | 2 | |
|----------|--|-----------------------|-------------------|--------------|--|------------|--------------|---|---------------|-------------|-------------|---------------|--|--------------------|---------------------|--|
| OI OI | Testhole Location | Туре | Thickness (mm) | Туре | Thickness (mm) | • | Depth (m) | Content Gravel Sand Silt (%) (%) (%) | Gravel (%) | Sand (%) | Silt (%) | Clay 1 (%) | Clay Liquid Plastic (%) Limit Limit | Plastic | Plasticity Index | |
| 표 | At property line between 998 and 1002 Dorchester Avenue 1 m fom north side of alley | Asphalt / Concrete | 35 / 145 | Clay Fill | 720 | ĝ | ži. | ā | 9 | | | ā | ā | ũ | a | |
| TH2 | At property line between 990 and 986 Dorchester Avenue 1 m fom north side of alley | Asphalt / Concrete | 105 / 100 | Clay Fill | 982 | e | e | E | e | - N | • | ě | ű | ű | E | |
| 표 | At property line between 980 and 984 Dorchester Avenue 1 m fom north side of alley | Asphalt / Concrete | 55/160 | Clay Fill | 1085 | , | ı | r | r | | | ı. | ı | 1 | r | |
| TH4 | At property line of 976 Dorchester Avenue | Asphalt / | 75 / 80 | III ARD | 745 | Clay Fill | 9.0 | 32 | 0.2 | 4.9 50.1 | | 44.8 | 49 | 17 | 32 | |
| | 1 m from south side of alley | Concrete | 3 | (10) | ? | Silty Clay | 1.2 | 31 | 9.0 | 2.8 | 57.3 | 39.3 | 39 | 16 | 26 | |

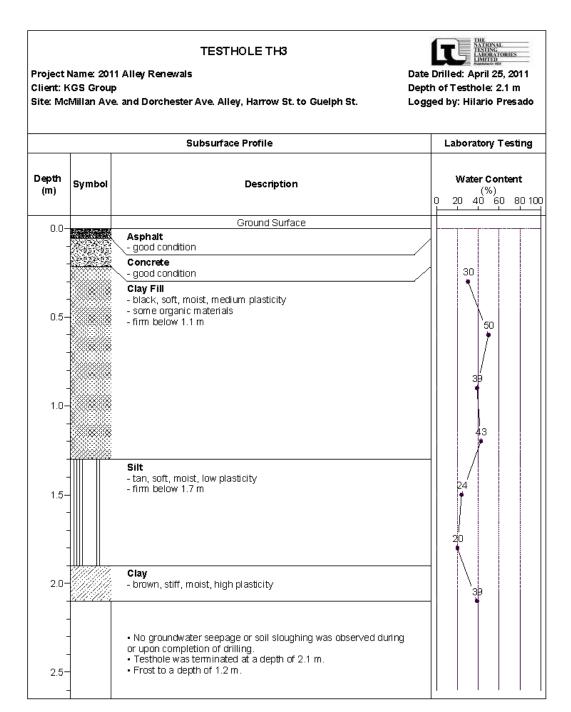
Test Hole Log #1 for Dorchester Ave. / McMillan Ave. Alley



Test Hole Log #2 for Dorchester Ave. / McMillan Ave. Alley



Test Hole Log #3 for Dorchester Ave. / McMillan Ave. Alley



Test Hole Log #4 for Dorchester Ave. / McMillan Ave. Alley

TESTHOLE TH4

Project Name: 2011 Alley Renewals Client: KGS Group Site: McMillan Ave. and Dorchester Ave. Alley, Harrow St. to Guelph St. Date Drilled: April 25, 2011
Depth of Testhole: 2.1 m
Logged by: Hilario Presado

| | Sul | osurface Profile | | | Laboratory | Testin | g | | |
|--|---|--|---------|-----------------|------------------------------|------------|----------|----------|----------|
| Depth (m) | Symbol | Description | PL 0 | Water Co | ntent (%) LJ 60 80 100 | Gravel (%) | Sand (%) | Silt (%) | Clay (%) |
| | | Ground Surface | | | | | | | |
| 0.0 | - go Cor - go Cla - biz - so - so | phalt nod condition norete nod condition y Fill ack, soft, moist, medium plasticity me organic material me sand and gravel | | 37 32 32 | | 0.2 | 4.9 | 50.1 | 44 |
| 1.0-(; -; -; -; -; -; -; -; -; | | | | 31 43 | | 0.6 | 2.8 | 57.3 | 39 |
| 2.0- | • No oru • Mi at a | n, soft, moist, low plasticity o soil sloughing was observed dur pon completion of drilling. nor groundwater seepage observ depth of 1.7 m. esthole was terminated at a depth | ed | 24 | | | | | |

Pavement Core Photos



MCMILLAN AVENUE AND DORCHESTER AVENUE ALLEY HARROW STREET TO GUELPH STREET



Core sample from Testhole TH1



Core sample from Testhole TH3



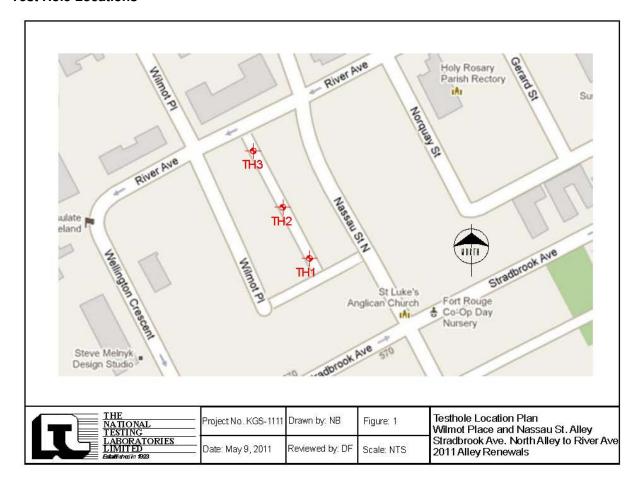
Core sample from Testhole TH2



Core sample from Testhole TH4

Geotechnical Report for Wilmot Pl. / Nassau St. Alley

Test Hole Locations



Summary of Core Samples

Wilmot Place and Nassau Street Alley Stradbrook Avenue North Alley to River Avenue

| oloda | | Faveme | nt Surrace | Favement s | Pavement Surface Pavement Structure Material | Commis | samble | Sample Moisture | Far | Particle Size Analysis | Analysis | • | ALL | Atterberg Limits | IIIS | |
|-------|---|-----------------------|-------------------|---------------|--|-------------------|--------------|--|---------------|------------------------|-------------|-------------|--------|------------------|---------------------|--|
| ID | Testhole Location | Туре | Thickness (mm) | Туре | Thickness (mm) | Description | Depth (m) | Content Gravel Sand Silt Clay Liquid Plastic (%) (%) (%) (%) Limit Limit Limit | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | Liquid | Plastic Limit | Plasticity Index | |
| į | At property line between 117 and 119 Nassau Street | Concrete | 100 | Cranular Eill | UCS | Granular Fill 0.3 | 0.3 | 22 | 46.6 | 46.6 17.9 20.6 14.9 | 20.6 | | 41 | 16 | 25 | |
| | 1 m from east side of alley | | 3 | 8 | | Silt | 6.0 | 59 | 0.0 | 0.0 3.1 74.0 22.9 | 74.0 | | 26 | 15 | 11 | |
| TH2 | At property line between 105 and 111 Nassau Street Asphalt / 1 m from east side of alley Concrete | Asphalt / Concrete | 50 / 165 | Clay Fill | 0.288 | | | F | î | - | | r | | - | ı | |
| TH3 | At property line between 93 and 97 Nassau Street 1 m from east side of alley | Concrete | 180 | Clay Fill | 026 | 9 | 31 | 5 | ű | 31 | 4 | 21 | 9 | 7.1 | 11 | |

Test Hole Log #1 for Wilmot Pl. / Nassau St. Alley

TESTHOLE TH1

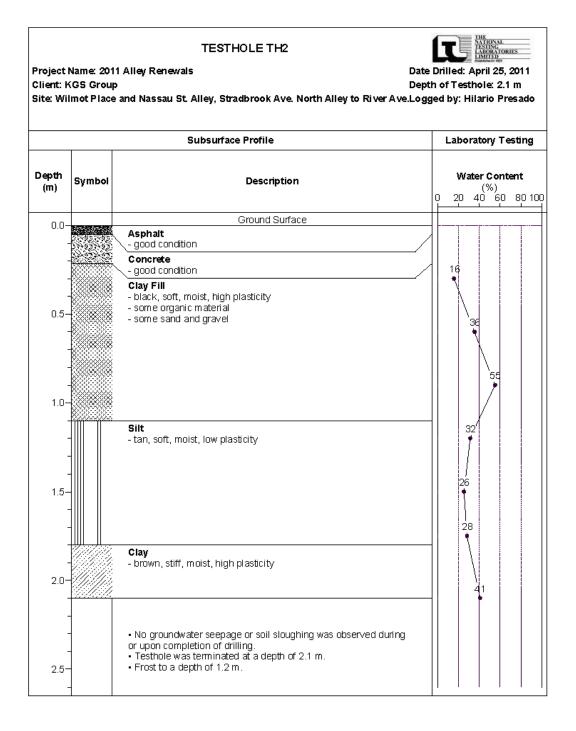
DHE NATIONAL TESTING LABORATORIES LIMITED

Project Name: 2011 Alley Renewals Client: KGS Group Date Drilled: April 25, 2011 Depth of Testhole: 2.1 m

Site: Wilmot Place and Nassau St. Alley, Stradbrook Ave. North Alley to River Ave.Logged by: Hilario Presado

| | | Subsurface Profile | | | | La | borato | ry T | Γesting | 3 | | |
|--------------|-----------|--|----|--------------|---------|----|--------|---------|------------|----------|----------|----------|
| Depth (m) | Symbol | Description | PL | | ter Co | | | . Ц | Gravel (%) | Sand (%) | Silt {%} | Clay (%) |
| | | | 作 | 20 | 40 | 60 | 80 1 | 00 — | טֿ | Sal | Si | ပ္ |
| 0.0- | V-10' 11' | Ground Surface | | | | | | | | | | |
| | | Concrete - good condition | | | | | | | | | | |
| 0.5- | | Granular Fill - black, moist, compact - some organic material - clayey below 0.5 m | | 22 | 36 | | | | 46.6 | 17.9 | 20.6 | 14. |
| 1.0- | | Silt - tan, soft, moist, low plasticity | _ | 24 | 9 | | | | 0.0 | 3.1 | 74.0 | 22. |
| 1.5- | | Clay - brown, stiff, moist, high plasticity Silt | | | 34 | | | | | | | |
| | - | - tan, soft, moist, low plasticity | | / 24 • | / | | | | | | | |
| 2.0- | | Clay - brown, stiff, moist, high plasticity | | | \ 32 | | | | | | | |
| 2.5- | - | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | | | | | | | | | |

Test Hole Log #2 for Wilmot Pl. / Nassau St. Alley



Test Hole Log #3 for Wilmot Pl. / Nassau St. Alley

TESTHOLE TH3 Project Name: 2011 Alley Renewals Date Drilled: April 25, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Wilmot Place and Nassau St. Alley, Stradbrook Ave. North Alley to River Ave.Logged by: Hilario Presado Subsurface Profile Laboratory Testing Depth Water Content Symbol Description (m) (%) 20 40 60 80 100 Ground Surface 0.0-Concrete - good condition Clay Fill 36 - black, soft, moist, high plasticity - some sand and gravel - silty below 0.6 m 0.5 1.0-- tan, soft, moist, low plasticity 27 Clay 33 - brown, stiff, moist, high plasticity 2.0 • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m.

· Frost to a depth of 1.2 m.

2.5

Pavement Core Photos



WILMOT PLACE AND NASSAU STREET ALLEY STRADBROOK AVENUE NORTH ALLEY TO RIVER AVENUE



Core sample from Testhole TH1



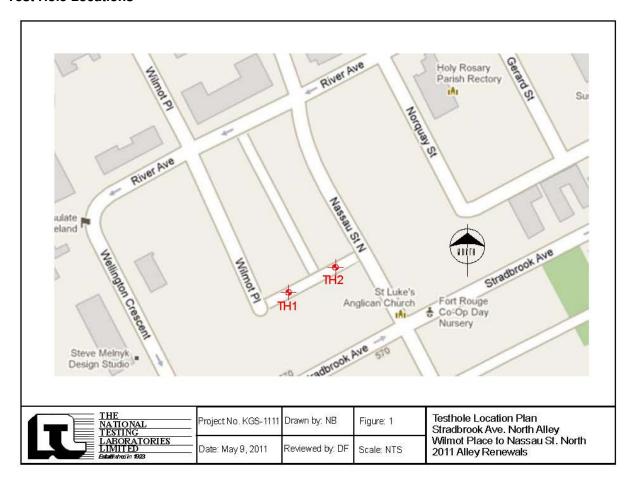
Core sample from Testhole TH2



Core sample from Testhole TH3

Geotechnical Report for Stradbrook Ave. North Alley

Test Hole Locations



Summary of Core Samples

Stradbrook Avenue North Alley Wilmot Place to Nassau Street North

| | (m) (%) (%) (%) (%) Limit Limit Index | | Thickness (mm) Description | | (mm) Type Thickness (mm) Description 180 Clay Fill 1220 - | Type Thickness (mm) Description Clay Fill 1220 | (mm) Type Thickness (mm) Description 180 Clay Fill 1220 - |
|----|---------------------------------------|---------------|----------------------------|-----------|---|--|---|
| | ı | ī | 1220 | | 180 Clay Fill | 180 Clay Fill | Con crete 180 Clay Fill |
| | | | | | | | |
| 35 | 9:0 | Clay Fill 0.6 | | Clay Fill | 180 Clay Fill 920 Clay Fill | Clay Fill 920 Clay Fill | 180 Clay Fill 920 Clay Fill |

Test Hole Log #1 for Stradbrook Ave. North Alley

TESTHOLE TH1

Project Name: 2011 Alley Renewals Client: KGS Group Site: Stradbrook Ave. North Alley, Wilmot Place to Nassau St. North Date Drilled: April 25, 2011
Depth of Testhole: 2.1 m
Logged by: Hilario Presado

| | | Subsurface Profile | Laboratory Testing |
|--------------|------------------|--|--|
| Depth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 100 |
| 0.0- | | Ground Surface | |
| 0.0- | | Concrete - good condition | |
| 0.5- | | Clay Fill - black, soft, moist, high plasticity - some organic material - firm below 0.8 m | 33 48 48 39 |
| 1.5- - | - - - - | Silt - tan, soft, moist, low plasticity | 29 |
| 2.0- | | Clay - brown, stiff, moist, high plasticity | |
| 2.5- | - | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | |

2.5

• Frost to a depth of 1.2 m.

Test Hole Log #2 for Stradbrook Ave. North Alley

TESTHOLE TH2 Project Name: 2011 Alley Renewals Date Drilled: April 25, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Stradbrook Ave. North Alley, Wilmot Place to Nassau St. North Logged by: Hilario Presado Subsurface Profile Laboratory Testing Sand (%) Clay (%) Depth Water Content (%) Silt (%) Gravel Symbol Description (m) 80 100 20 40 60 Ground Surface 0.0 Concrete - good condition Clay Fill 26 - black, soft, moist, high plasticity - some organic material - firm below 0.6 m 0.5 0.0 7.3 31.4 61.3 1.0 26 - tan, soft, moist, low plasticity 25 Clay - brown, firm, moist, high plasticity 35 2.0 No groundwater seepage or soil sloughing was observed during or upon completion of drilling. · Testhole was terminated at a depth of

Pavement Core Photos



STRADBROOK AVENUE NORTH ALLEY WILMOT PLACE TO NASSAU STREET NORTH



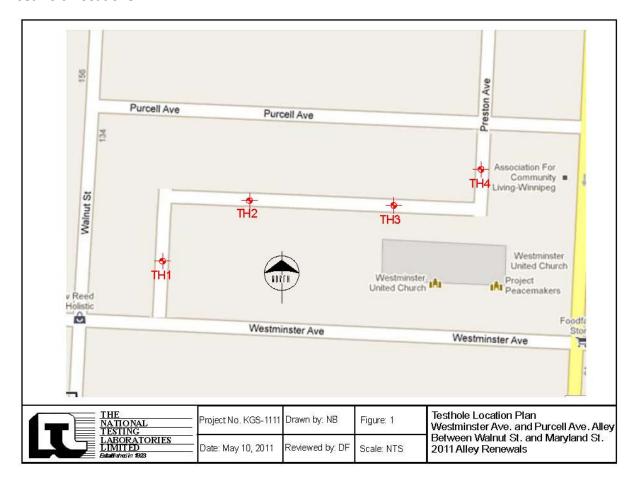
Core sample from Testhole TH1



Core sample from Testhole TH2

Geotechnical Report for Westminster Ave. / Purcell Ave. Alley

Test Hole Locations



Summary of Core Samples

Westminster Avenue and Purcell Avenue Alley Between Walnut Street and Maryland Street

| | | Favemen | nt surrace | Favernen : | Pavement surface Pavement suructure Material | | Sample | sample Moisture | | Farincie Size Arialysis | Andlysi | 9 | Ŧ | Attended Limits | IIS | |
|-----|---|----------|-------------------|------------|--|---------------|--------------|--------------------|------|-------------------------|-------------|-------------|-----------------|------------------|---------------------|--|
| ID | Testhole Location | Туре | Thickness (mm) | Туре | Type Thickness (mm) Description | Sample | Depth (m) | Content Gravel (%) | | Sand Silt (%) | Silt (%) | Clay (%) | Liquid Limit | Plastic Limit | Plasticity Index | |
| H1 | At property line between 139 and 141 Walnut Street 1 m from west side of alley | Concrete | 175 | Clay Fill | 1525 | 21 | ä | ē | gi. | 0 | ĝ | 21 | ā | 5 | a | |
| TH2 | At property line between 755 and 757 Westminster Avenue 1 m from south side of alley | Concrete | 155 | Clay Fill | 1545 | = | e e | Ü | E | 0 | 0 | 12 | ñ | ě | r | |
| Ę | 82 m east of property line of 143 Walnut Street | Concrete | 180 | III AND | 230 | Clay Fill | 0.3 | 38 | 1.3 | 6.5 | 22.0 | 70.2 | 7.1 | 23 | 48 | |
| 2 | 1 m from south side of alley | | | Olay I III | 077 | Granular Fill | 1.2 | 5 | 42.9 | 46.0 | 11 | 1. | 833 | non-plastic | | |
| 7H | 21 m south of Purcell Avenue 1 m from east side of alley | Concrete | 150 | Clay Fill | 750 | = | Ŧ | X | | ï | ï | | ï | ï | T | |

Test Hole Log #1 for Westminster Ave. / Purcell Ave. Alley

TESTHOLE TH1 Project Name: 2011 Alley Renewals Date Drilled: April 25, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Westminster Ave. and Purcell Ave. Alley, between Walnut St. and Logged by: Hilario Presado Maryland St. Subsurface Profile Laboratory Testing Depth Water Content Symbol Description (m) (%) 20 40 60 80 100 Ground Surface 0.0-Concrete - good condition Clay Fill 33 - black, soft to firm, moist, high plasticity - some organic material - trace sand and fine gravel from 1.4 m to 1.6 m 0.5 38 1.0 40 Silty Clay 34 - brown, firm, moist, high plasticity • No groundwater seepage or soil sloughing was observed during

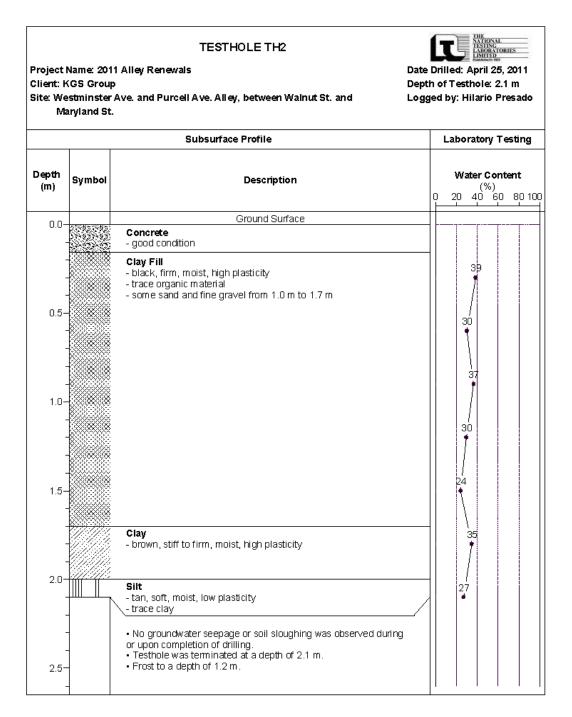
or upon completion of drilling.

· Frost to a depth of 1.2 m.

2.5

Testhole was terminated at a depth of 2.1 m.

Test Hole Log #2 for Westminster Ave. / Purcell Ave. Alley



Test Hole Log #3 for Westminster Ave. / Purcell Ave. Alley

TESTHOLE TH3

Project Name: 2011 Alley Renewals Client: KGS Group Site: Westminster Ave. and Purcell Ave. Alley, between Walnut St. and Maryland St.



| | | Subsurface Profile | Laboratory Testing | | | | | | | | |
|--------------|--------|--|---|--|--|--|--|--|--|--|--|
| Depth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 100 8 30 100 8 | | | | | | | | |
| | | Ground Surface | | | | | | | | | |
| 0.0- | | Concrete - good condition | | | | | | | | | |
| 0.5- | | Clay Fill - black, firm, moist, high plasticity - some organic material | 38 1.3 6.5 22.0 7 | | | | | | | | |
| 1.0- | | Granular Fill - tan, loose, dry, non plastic - 25 mm maximum aggregate size | 5/ | | | | | | | | |
| 1.5- | | Clay - black, firm, moist, low plasticity - some sand and gravel from 1.5 m to 1.7 m | 40 | | | | | | | | |
| 2.0- | | | 42 | | | | | | | | |
| 2.5- | - | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | | | | | | | | |

Test Hole Log #4 for Westminster Ave. / Purcell Ave. Alley

TESTHOLE TH4 Project Name: 2011 Alley Renewals Date Drilled: April 25, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Westminster Ave. and Purcell Ave. Alley, between Walnut St. and Logged by: Hilario Presado Maryland St. Subsurface Profile Laboratory Testing Depth Water Content Symbol Description (m) (%) 20 40 60 80 100 Ground Surface 0.0-Concrete - good condition Clay Fill - black, firm, moist, high plasticity - some organic material 35 0.5 33 31 Granular Fill - tan, loose, dry, non plastic - 25 mm maximum aggregate size Clay and Gravel Fill - black, dense, moist, medium plasticity 39 - brown, firm, moist, high plasticity 2.0 • No groundwater seepage or soil sloughing was observed during or upon completion of drilling.

Testhole was terminated at a depth of 2.1 m.

· Frost to a depth of 1.2 m.

2.5

Pavement Core Photos



WESTMINSTER AVENUE AND PURCELL AVENUE ALLEY BETWEEN WALNUT STREET AND MARYLAND STREET



Core sample from Testhole TH1



Core sample from Testhole TH3



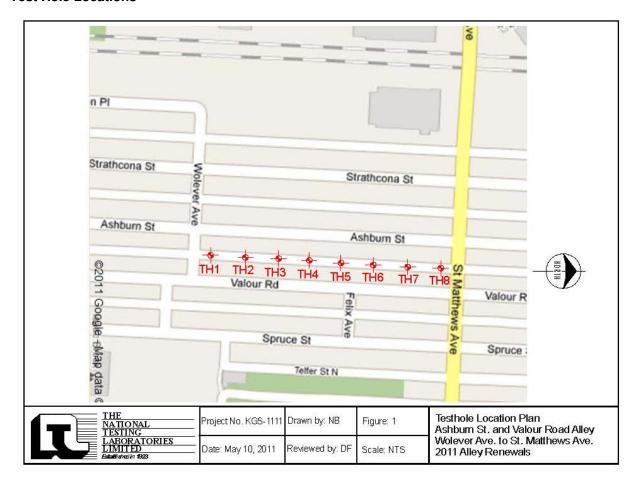
Core sample from Testhole TH2



Core sample from Testhole TH4

Geotechnical Report for Ashburn St. / Valour Rd. Alley

Test Hole Locations



Summary of Core Samples

Ashburn Street and Valour Road Alley Wolever Avenue to St. Matthews Avenue

| olodfoo | | Favemen | II Surrace | Pavement = | Pavement surface Pavement structure Material | Commo | Sample | Sample Moisture | Fan | Particle Size Analysis | Analysi | 6 | AII | Attemeng Limits | JIIIS | |
|---------|--|-----------|-------------------|------------|--|-------------|--------------|-----------------|---------------|------------------------|-------------|-------------|--------|------------------|---------------------|--|
| ID and | Testhole Location | Туре | Thickness (mm) | Туре | Thickness (mm) | _ | Depth (m) | Content (%) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | Liquid | Plastic Limit | Plasticity Index | |
| į | At property line between 751 and 753 Ashburn Street | oposous C | 000 | 100 | 800 | Clay Fill | 9:0 | 41 | 0.2 | 16.9 | 36.4 | 46.5 | 25 | 20 | 34 | |
| | 1 m from west side of alley | מומומומ | 202 | Clay | 99 | Clayey Silt | 6:0 | 24 | 0.0 | 11.4 | 64.6 | 24.0 | 28 | 13 | 15 | |
| TH2 | At property line between 761 and 763 Ashbum Street 1 m from west side of alley | Concrete | 200 | Clay Fill | 006 | ĩ | 4 | | ĭ | Ĩ | 1 | , | ı, | ¥ | ī | |
| 딾 | At property line between 777 and 783 Ashbum Street 1 m from west side of alley | Concrete | 220 | Clay Fill | 1180 | ű | а | a | ī | ű | 3 | и | Ţ, | т | a | |
| TH4 | At property line between 797 and 799 Ashbum Street 1 m from east side of alley | Concrete | 200 | Clay Fill | 1200 | 15 | 9 | ij. | a | ã | 0 | 9 | | ā | 9 | |
| TH5 | At property line between 815 and 819 Ashbum Street 1 m from east side of alley | Concrete | 200 | Clay Fill | 008 | 30 | SU | 3.02 | 215 | 9 | (1) | 3.13 | (1) | 275 | (1) | |
| TH6 | At property line between 835 and 839 Ashburn Street 1 m from west side of alley | Concrete | 170 | Clay Fill | 1030 | î, | | | r | ř | i. | 13 | ij | r | ī | |
| TH7 | At property line between 843 and 845 Ashbum Street 1 m from west side of alley | Concrete | 225 | Clay Fill | 1075 | ī | ı | | r | ij | ı | | ı | r | ï | |
| 118 | At property line between 853 and 855 Ashburn Street 1 m from west side of alley | Concrete | 265 | Clay Fill | 635 | ī | | , | 1 | ï | ī | J | į | 7 | ī | |

Test Hole Log #1 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH1

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave. Date Drilled: April 19, 2011
Depth of Testhole: 2.1 m
Logged by: Hilario Presado

| | | Subsurface Profile | Laboratory Testing | | | | | | | | |
|--------------|--------|--|--------------------|-----------|------------|------------------|------------|----------|---------------------------------------|----------|-----|
| Depth (m) | Symbol | Description | PL 0 | Wa | ter Co | ntent | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | |
| | | Ground Surface | ╬ | | | | \dashv | | , , , , , , , , , , , , , , , , , , , | 07 | _ |
| 0.0- | 91 | Concrete - good condition | | | | | | | | | |
| 0.5- | | Clay Fill - black, soft, moist, high plasticity - trace organic material - some sand | | 23 | 41 | - | | 0.2 | 16.9 | 36.4 | 463 |
| | | Clayey Silt - tan, soft, moist, low plasticity | | 24 | | | | 0.0 | 11.4 | 64.6 | 24. |
| 1.0- | | Silty Clay - brown, stiff, moist, high plasticity | | | 35 | | | | | | |
| 2.0- | | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | | 43 • | | | | | | |

Test Hole Log #2 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH2

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | | Laboratory Testing |
|--------------|--------|--|----|---|
| Depth (m) | Symbol | Description | ļ | Water Content (%) 20 40 60 80 10 |
| | | Ground Surface | +F | |
| 0.0- | | Concrete - good condition | | |
| | | Clay Fill - black, soft, moist, high plasticity | | 46 |
| 0.5- | | | | 29 * |
| 1.0- | 44444 | Silty Clay | | 29 |
| | | - brown, stiff, moist, high plasticity | | |
| 1.5- | | | | 29 |
| | | | | 32 |
| 2.0- | | | - | 36 |
| | | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | |
| 2.5- | 1 | | | |

Test Hole Log #3 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH3

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | Laboratory Testing |
|---------------|--------|--|--|
| epth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 100 |
| | | Ground Surface | |
| -0.0 - | | Concrete - good condition | |
| - 0.5- | | Clay Fill - black, firm, moist, high plasticity - some organic material | 28 |
| - | | | 45 40 40 |
| 1.0- | | | 37 |
| 1.5- - | | Clayey Silt - tan, soft, moist, low plasticity | 31 |
| - - 2.0 | | Clay - brown, stiff, moist, high plasticity | 32 • 1 32 32 32 33 35 35 |
| - - - | | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | |
| 2.5- |] | | |

Test Hole Log #4 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH4

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | + | Laboratory Testing |
|--------------|-------------------------|---|---|---|
| Depth (m) | Symbol | Description | o | Water Content (%) 20 40 60 80 10 |
| | | Ground Surface | ╫ | |
| -0.0 | | Concrete - good condition | | |
| 0.5- | | Clay Fill - black, soft, moist, medium plasticity - some organic material | | 32 |
| | | | | 40 |
| 1.0- | | | | 38 |
| 1.5- | 11111 11111 11111 | Silty Clay - brown, stiff, moist, high plasticity | | 36 |
| | | Clayey Silt - tan, soft, moist, low plasticity | | 28 |
| 2.0- | 1++ | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was the of 1.2 m. Testhole was the of 1.2 m. | | 29 |
| 2.5- | | Frost to a depth of 1.2 m. | | |

Test Hole Log #5 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH5

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | Laboratory Testing |
|-----------------------------|-------------|--|---|
| Depth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 10 |
| | | Ground Surface | |
| 0.0- | 3 9 9 9 9 9 | Concrete - good condition | |
| 0.5- | | Clay Fill - black, soft, moist, high plasticity - some organic materials - trace sand and fine gravel | 28 37 29 |
| 1.0- | | Silty Clay - brown, stiff, moist, high plasticity | 32 |
| 1.5- - - - 2.0- | | Clayey Silt - tan, soft, moist, low plasticity | 24 • 26 • • • • |
| | - | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | |
| 2.5- | 1 | | |

Test Hole Log #6 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH6

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | Laboratory Testing |
|----------------------------------|----------------------------------|--|---|
| epth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 100 |
| | | Ground Surface | |
| -0.0 - | 37-27-27 37-27-27 37-27-27 | Concrete - good condition | |
| 0.5- - - - - 1.0- | | Clay Fill - black, soft, moist, medium plasticity - some organic material - firm below 0.8 m | 35 37 32 |
| 1.0- - - | | Silty Clay - brown, stiff, moist, high plasticity | 29 |
| 1.5- | | Clayey Silt - tan, soft, moist, low plasticity | 26 |
| 2.5- | | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | |

Test Hole Log #7 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH7

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | + | Labo | ratory T | esting |
|--------------|---------|--|-------|------|-------------------------|--------|
| Depth (m) | Symbol | Description | | | ter Con (%) 40 60 | |
| | | | - }- | | 40 60 | 00 100 |
| 0.0- | 3.21.21 | Ground Surface Concrete - good condition | _ - | 24 | | |
| 0.5- | | Clay Fill - black, soft, moist, medium plasticity - some organic material - some sand - silty below 0.9 m | | 3 | | |
| 1.5- | | Clayey Silt - tan, soft, moist, low plasticity | | 24 | | |
| 2.0- 2.5- | | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | 22 | | |

Test Hole Log #8 for Ashburn St. / Valour Rd. Alley

TESTHOLE TH8

Project Name: 2011 Alley Renewals Client: KGS Group Site: Ashbum St. and Valour Road Alley, Wolever Ave. to St. Matthew Ave.

| | | Subsurface Profile | _ | Laboratory Testing |
|---------------------|--|---|---|--|
| Depth (m) | Symbol | Description | 0 | Water Content (%) 20 40 60 80 100 |
| | | Ground Surface | ╬ | |
| -0.0 | 93 93 93 93 93 93 93 93 94 95 95 95 96 9 | Concrete - good condition | | 24 |
| 0.5- | | - black, firm, moist, high plasticity - trace organic material | | 36 36 |
| 1.0- | | Clayey Silt - tan, soft to firm, moist, low plasticity | | 31 |
| 1.5- - - - | | Clay | | 22 |
| 2.0- | | brown, stiff, moist, high plasticity No groundwater seepage or soil sloughing was observed during | | 42 |
| - 2.5 | - | or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | |

Pavement Core Photos #1



ASHBURN STREET AND VALOUR ROAD ALLEY WOLEVER AVENUE TO ST. MATTHEWS AVENUE



Core sample from Testhole TH1



Core sample from Testhole TH3



Core sample from Testhole TH2



Core sample from Testhole TH4

Pavement Core Photos #2



ASHBURN STREET AND VALOUR ROAD ALLEY WOLEVER AVENUE TO ST. MATTHEWS AVENUE



Core sample from Testhole TH5



Core sample from Testhole TH7



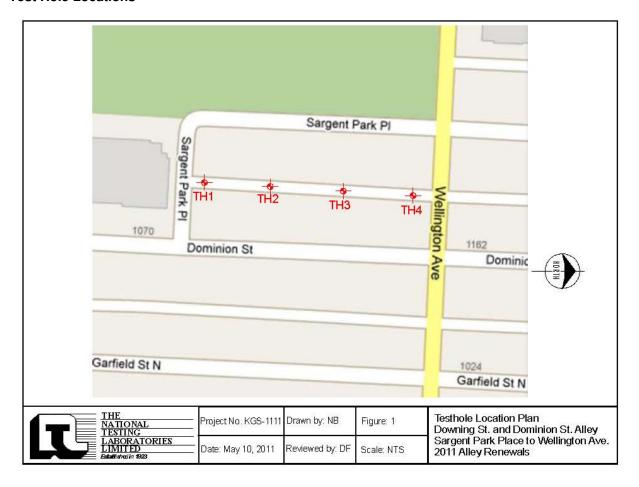
Core sample from Testhole TH6



Core sample from Testhole TH8

Geotechnical Report for Downing St. / Dominion St. Alley

Test Hole Locations



Summary of Core Samples

Downing Street and Dominion Street Alley Sargent Park Place to Wellington Avenue

| Touthall | | Pavemer | Pavement Surface | Pavemen | Pavement Structure | Commit | Sample | Sample Moisture | | Particle Size Analysis | Analysis | s | Atte | Atterberg Limits | nits |
|------------------|--|----------|-------------------|------------|--------------------|-----------|--------------|--|-------------------|------------------------|-------------|------|-----------------|------------------|---------------------|
| i estriore ID | Testhole Location | Туре | Thickness (mm) | Туре | Thickness (mm) | Sample | Depth (m) | Depth Content Gravel Sand Silt Clay Liquid Plastic Plasticity ('%) ('%) ('%) ('%) ('%) ('mit Limit Index | Gravel (%) | Sand (%) | Silt (%) | Clay | Liquid Limit | Plastic Limit | Plasticity Index |
| TH1 | At property line between 1103 and 1105 Downing Street 1 m from east side of alley | Concrete | 220 | Clay Fill | 089 | K | | sas | 946 | (40) | 66 | ı | (0) | 919 | (41) |
| TH2 | At property line between 1113 and 1115 Downing Street 1 m from west side of alley | Concrete | 210 | Clay Fill | 068 | | | | 1 | | 3 | | ű | п | n |
| TH3 | 1.5 m south of the property line between 1121 and 1123 Downing Street 1 m from west side of alley | Concrete | 200 | Clay Fill | 800 | = | -) | | | | | | i | | |
| THA | 2 m south of the property line between 1125 and 1127 Downing Street | Concrete | 190 | III A EIII | 510 | Clay Fill | 9.0 | 38 | 0.3 | 9.2 | 8.43 | 35.7 | 43 | 15 | 28 |
| | | | 2 | ii (1) | 2 | IIIS | 6.0 | 29 | 0.0 6.3 70.5 23.2 | 6.3 | 5.07 | 23.2 | 29 | 14 | 15 |

Test Hole Log #1 for Downing St. / Dominion St. Alley

TESTHOLE TH1 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Downing St. and Dominion St. Alley, Sargent Park Place to Wellington Ave. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Depth Water Content Symbol Description (m) (%) 40 60 80 100 Ground Surface 0.0-Concrete - good condition 50 Clay Fill - black, soft, saturated, medium plasticity - some organic material 0.5 Silt - tan, soft, moist, low plasticity 1.0 31 - brown, moist, firm, high plasticity - stiff below 1.8 m 38 2.0

• No groundwater seepage or soil sloughing was observed during

or upon completion of drilling.

· Frost to a depth of 1.2 m.

2.5

Testhole was terminated at a depth of 2.1 m.

Test Hole Log #2 for Downing St. / Dominion St. Alley

TESTHOLE TH2 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Downing St. and Dominion St. Alley, Sargent Park Place to Wellington Ave. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Depth Water Content Symbol Description (m) (%) 40 60 80 100 Ground Surface 0.0 Concrete - good condition 40 - black, soft, saturated, medium plasticity - some organic material 0.5 1.0 - tan, soft, moist, low plasticity 26 - brown, stiff, moist, high plasticity 2.0 • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. · Frost to a depth of 1.2 m. 2.5

Test Hole Log #3 for Downing St. / Dominion St. Alley

TESTHOLE TH3 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Downing St. and Dominion St. Alley, Sargent Park Place to Wellington Ave. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Depth Water Content Symbol Description (m) (%) 20 40 60 80 100 Ground Surface 0.0-Concrete - good condition Clay Fill - black, soft, saturated, high plasticity - some organic material 0.5 1.0-- tan, soft, moist, low plasticity 26 29 27 • Clay 2.0 - brown, stiff, moist, high plasticity 38 • No groundwater seepage or soil sloughing was observed during

or upon completion of drilling.

· Frost to a depth of 1.2 m.

2.5

Testhole was terminated at a depth of 2.1 m.

Test Hole Log #4 for Downing St. / Dominion St. Alley

TESTHOLE TH4

DHE NATIONAL TESTING LABORATORIES LIMITED

Project Name: 2011 Alley Renewals Client: KGS Group Date Drilled: April 19, 2011 Depth of Testhole: 2.1 m

Site: Downing St. and Dominion St. Alley, Sargent Park Place to Wellington Ave. Logged by: Hilario Presado

| | | Subsurface Profile | | | | La | boratory | Testin | g | | |
|--------------|-----------------|--|-----|---------------|--------|----|----------|--------------------|----------|----------|----------|
| Depth (m) | Symbol | Description | PL- | | ter Co | | L | -□ ⊢ Gravel (%) | Sand (%) | Silt (%) | Clay (%) |
| | | | L | 20 | 40 | 60 | 80 10 | σ | တိ | Ñ | ਹ |
| 0.0- | A POLICE VOLUME | Ground Surface | ╙ | | | | | | | | |
| | | Concrete - good condition | | | | | | | | | |
| | | Clay Fill - black, soft, moist, high plasticity - some organic material | | | 36 | | | | | | |
| 0.5- · | | | | + | 38 | | | 0.3 | 9.2 | 54.8 | 35. |
| 1.0- | - | Silt - tan, soft, moist, low plasticity - firm below 1.8 m | | 2 | 9 | | | 0.0 | 6.3 | 70.5 | 23.1 |
| 1.5- | - | | | 23 • 26 | | | | | | | |
| 2.0- | - | Clay - brown, stiff, moist, high plasticity | | | 31 | | | | | | |
| 2.5- | - - - | No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m. Frost to a depth of 1.2 m. | | | • | | | | | | |

Pavement Core Photos



DOWNING STREET AND DOMINION STREET ALLEY SARGENT PARK PLACE TO WELLINGTON AVENUE



Core sample from Testhole TH1



Core sample from Testhole TH2



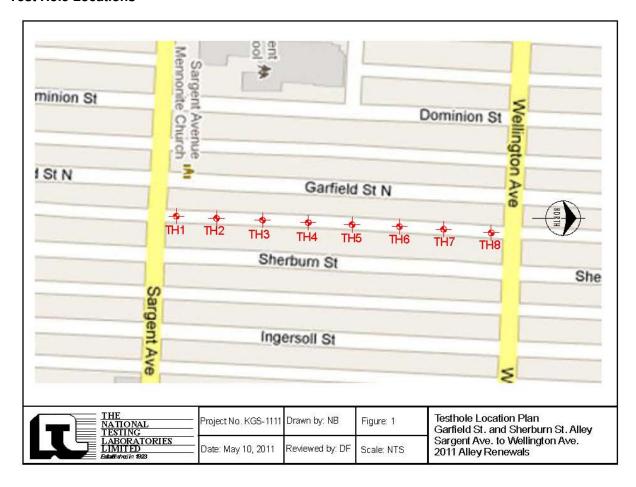
Core sample from Testhole TH3



Core sample from Testhole TH4

Geotechnical Report for Garfield St. / Sherburn St. Alley

Test Hole Locations

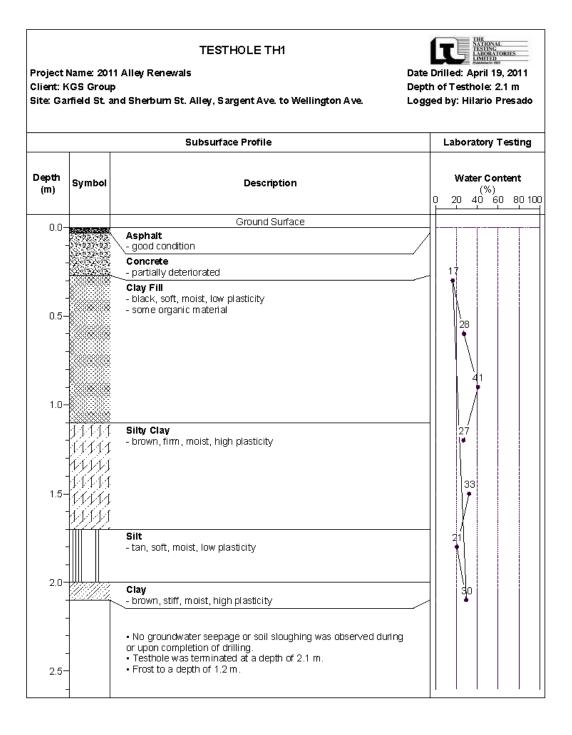


Summary of Core Samples

Garfield Street and Sherburn Street Alley Sargent Avenue to Wellington Avenue

| | | Favemen | T SULTACE | -avement | Pavement surface Pavement structure Material | | Sample | Sample Moisture | Рап | Particle Size Analysis | Analysi | s | Ä | Attemperg Limits | JIIS |
|----------|---|-----------------------|-------------------|-----------|--|--------------|--------------|-----------------|---------------|------------------------|-------------|----------|--------|------------------|---------------------|
| ID | Testhole Location | Type | Thickness (mm) | дуре | Thickness (mm) | Description | Depth (m) | Content (%) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | Liquid | Plastic Limit | Plasticity Index |
| 王 | At property line between 911 and 915 Garfeld Street 1 m from west side of alley | Asphalt / Concrete | 30 / 240 | Clay Fill | 088 | 90 | (11) | 3 | 210 | 8018 | 910 | 90 | (1) | 70 | ı |
| TH2 | At property line between 929 and 931 Garfeld Street 1 m from west side of alley | Asphalt / Concrete | 30 / 240 | Clay Fill | 086 | Clay Fill | 0.3 | 35 | 10.1 | 36.3 | 32.6 | 21.0 | 52 | 21 | 31 |
| 표3 | 2 m south of property line between 941 and 943 Garfield Street 1 m from east side of alley | Asphalt / Concrete | 80 / 160 | Clay Fill | 092 | 3 | la . | ä | ir | in . | îr | ä | i | ű | 2 |
| Н | At property line between 957 and 959 Garfeld Street 1 m from west side of alley | Asphalt / Concrete | 45 / 230 | Clay Fill | 9729 | Clayey Silt | 6:0 | 26 | 9.0 | 6.5 | 9.69 | 23.3 | 26 | 14 | 12 |
| TH5 | At property line between 965 and 969 Garfeld Street 1 m from west side of alley | Asphalt / Concrete | 90 / 160 | Clay Fill | 099 | (+) | a | | à | | 4 | ì | ï | î | |
| ТН6 | At property line between 979 and 981 Garfeld Street 1 m from west side of alley | Asphalt / Concrete | 40 / 190 | Clay Fill | 0// | (x) | (II | ī | ¥ | | ¥ | ï | Ĭ. | î | I |
| TH7 | At property line between 993 and 997 Garfeld Street 1 m from east side of alley | Asphalt / Concrete | 25 / 220 | Clay Fill | 998 | ï | | | ï | | Y | ī | Ĭ | î | ī |
| 표 | At property line between 1007 and 1009 Garfield Street 1 m from east side of alley | Asphalt / Concrete | 50 / 250 | Clay Fill | 009 | Ĭ | | × | Y | | · | ő | Ĭ | î | ī |

Test Hole Log #1 for Garfield St. / Sherburn St. Alley



Test Hole Log #2 for Garfield St. / Sherburn St. Alley

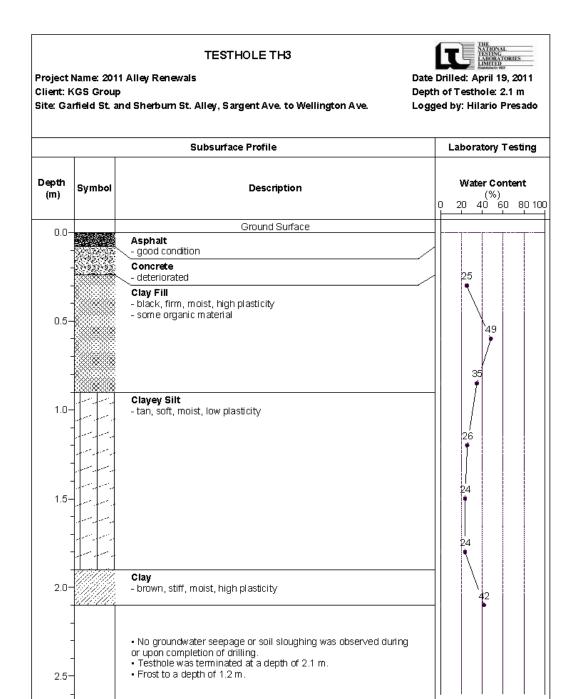
TESTHOLE TH2 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Garfield St. and Sherburn St. Alley, Sargent Ave. to Wellington Ave. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Sand (%) Clay (%) Depth Water Content (%) Silt (%) Gravel Symbol Description (m) 80 100 20 40 60 Ground Surface 0.0-Asphalt good condition Concrete - partially deteriorated 35 10.1 36.3 32.6 21.0 Clay Fill black, soft, moist, high plasticity some organic material 0.5 26 1.0 30 Silty Clay - brown, stiff, moist, medium plasticity 32 31 30 No groundwater seepage or soil sloughing was observed during or upon completion of drilling.

· Testhole was terminated at a depth of

• Frost to a depth of 1.2 m.

2.5

Test Hole Log #3 for Garfield St. / Sherburn St. Alley



Test Hole Log #4 for Garfield St. / Sherburn St. Alley

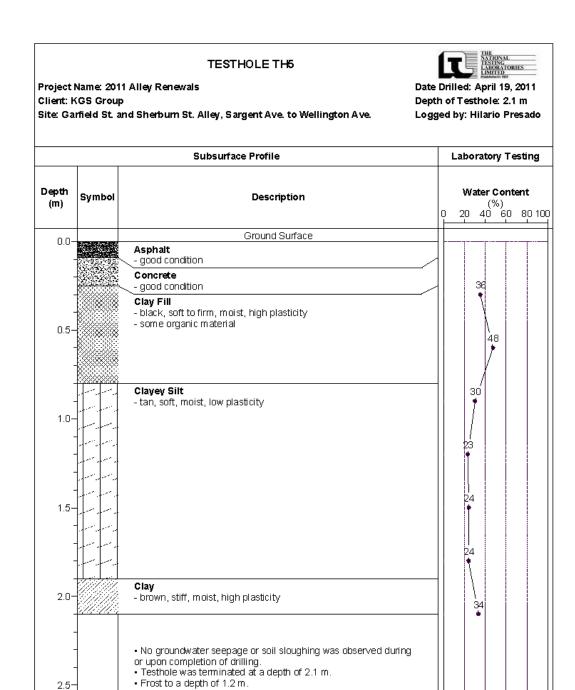
TESTHOLE TH4 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Garfield St. and Sherburn St. Alley, Sargent Ave. to Wellington Ave. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Sand (%) Clay (%) Depth Water Content (%) Silt (%) Gravel Symbol Description (m) 80 100 20 40 60 Ground Surface 0.0-Asphalt - good condition Concrete 67 - deteriorated Clay Fill - black, soft, saturated, high plasticity - some organic material 0.5 Clayey Silt 26 - tan, soft, moist, low plasticity 0.6 6.5 69.6 23.3 1.0 28 31 1.5 26 Clay 2.0 - brown, stiff, moist, high plasticity No groundwater seepage or soil sloughing was observed during or upon completion of drilling.

· Testhole was terminated at a depth of

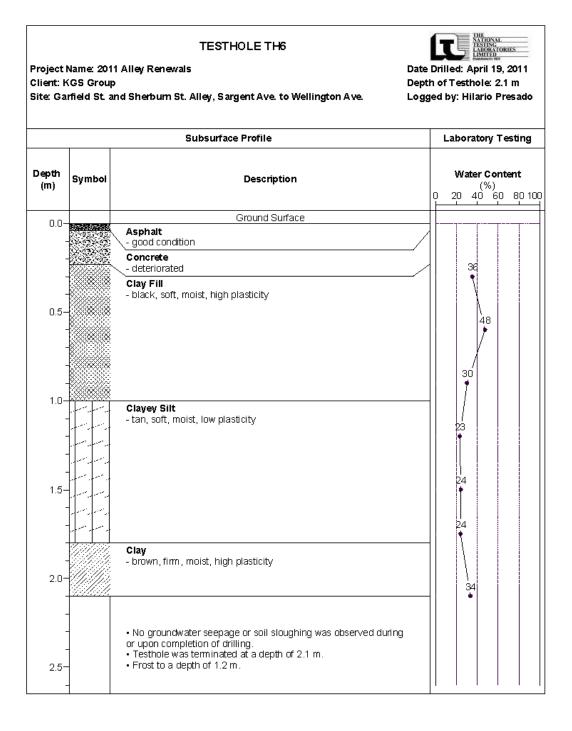
• Frost to a depth of 1.2 m.

2.5

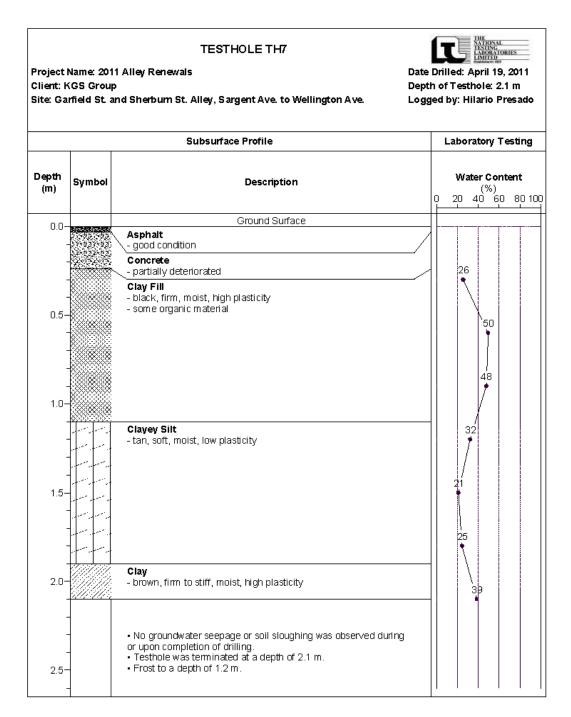
Test Hole Log #5 for Garfield St. / Sherburn St. Alley



Test Hole Log #6 for Garfield St. / Sherburn St. Alley



Test Hole Log #7 for Garfield St. / Sherburn St. Alley



Test Hole Log #8 for Garfield St. / Sherburn St. Alley

TESTHOLE TH8 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Garfield St. and Sherburn St. Alley, Sargent Ave. to Wellington Ave. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Water Content Depth Symbol Description (m) (%) 20 40 60 80 100 Ground Surface Asphalt good condition Concrete - partially deteriorated Clay Fill - black, soft, moist, high plasticity - some organic material 0.5 Clayey Silt 29 - tan, soft, moist, low plasticity 1.0 1.5 24 2.0 26 • No groundwater seepage or soil sloughing was observed during

or upon completion of drilling.

· Frost to a depth of 1.2 m.

2.5

Testhole was terminated at a depth of 2.1 m.

Pavement Core Photos #1



GARFIELD STREET AND SHERBURN STREET ALLEY SARGENT AVENUE TO WELLINGTON AVENUE



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3



Core sample from Testhole TH4

Pavement Core Photos #2



GARFIELD STREET AND SHERBURN STREET ALLEY SARGENT AVENUE TO WELLINGTON AVENUE



Core sample from Testhole TH5



Core sample from Testhole TH7



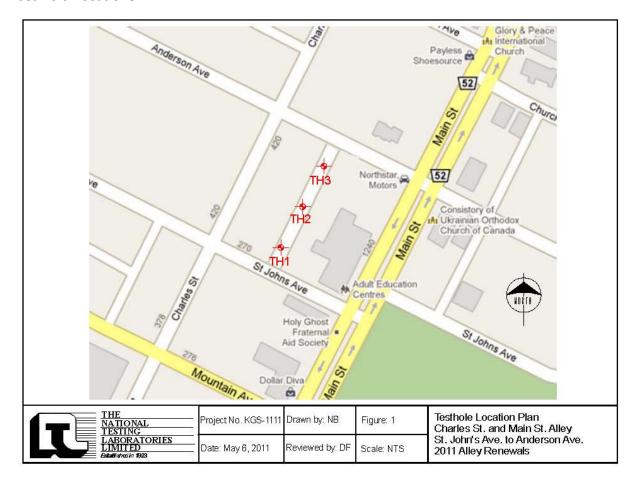
Core sample from Testhole TH6



Core sample from Testhole TH8

Geotechnical Report for Charles St. / Main St. Alley

Test Hole Locations

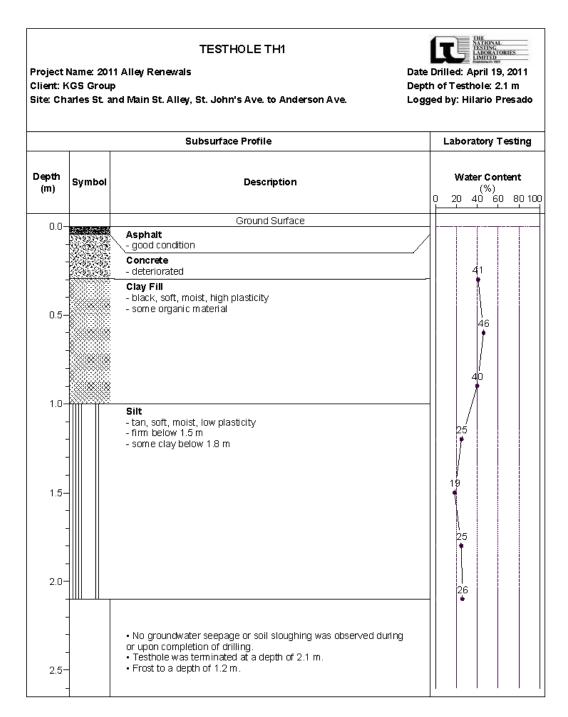


Summary of Core Samples

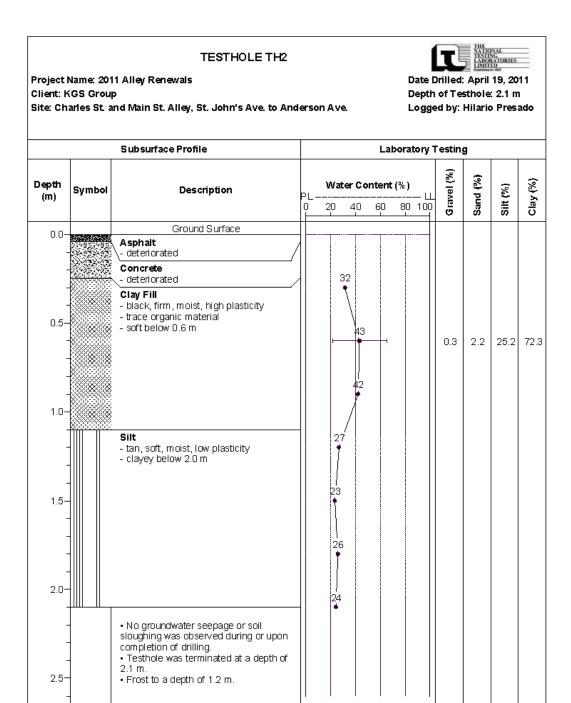
Charles Street and Main Street Alley St. John's Avenue to Anderson Avenue

| 9 | | Favelle | II salliace | Favellell a | ravellell sullace Favellell suluciue material | Olamoo | odilliple | Sample Moistare | r g | Fallicle Size Alialysis | 4 Idlysis | | | Allel Del B CIIIIIIS | 2 |
|----------|---|-----------------------|-------------------|-------------|---|-----------|--------------|-------------------------|---------------|-------------------------|-------------|-----------|--------|----------------------|---|
| ole C | Testhole Location | Туре | Thickness (mm) | Туре | Type Thickness (mm) Description | Sample | Depth (m) | (m) (%) (%) (%) (%) (%) | Gravel (%) | Sand (%) | Silt (%) | lay %) | Liquid | Plastic Limit | Liquid Plastic Plasticity Limit Limit Index |
| = | At property line between 409 and 411 St. John's Avenue Asphalt / 1 m from west side of alley Concrete | Asphalt / Concrete | 45 / 250 | Clay Fill | 705 | ř | ij. | 1 | ï | | | | ı | · | r |
| 22 | At property line between 415 and 419 St. John's Avenue Asphall / 1 m from west side of alley Concrete | Asphalt / Concrete | 40 / 205 | Clay Fill | 855 | Clay Fill | 9.0 | 43 | 0.3 | 2.2 | 25.2 | 72.3 | 92 | 22 | 43 |
| <u>0</u> | At property line between 427 and 429 St. John's Avenue 1 m from west side of alley | Asphalt / Concrete | 100 / 260 | Clay Fill | 1340 | ¥ | , T | (8) | 112 | | 010 | 1 | 210 | 16 | 110 |

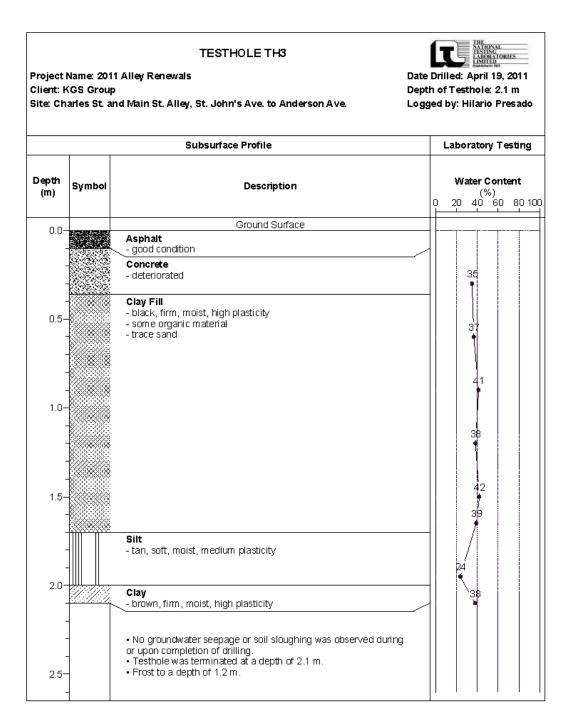
Test Hole Log #1 for Charles St. / Main St. Alley



Test Hole Log #2 for Charles St. / Main St. Alley



Test Hole Log #3 for Charles St. / Main St. Alley



Pavement Core Photos



CHARLES STREET AND MAIN STREET ALLEY ST. JOHN'S AVENUE TO ANDERSON AVENUE



Core sample from Testhole TH1



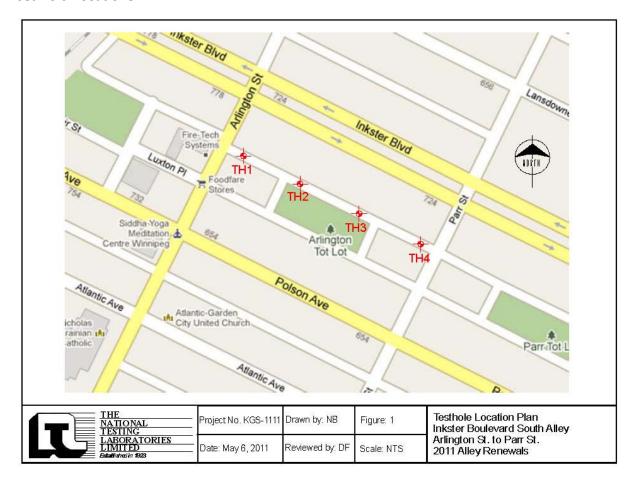
Core sample from Testhole TH2



Core sample from Testhole TH3

Geotechnical Report for Inkster Blvd. South Alley

Test Hole Locations



Summary of Core Samples

Inkster Boulevard South Alley Arlington Street to Parr Street

| 9 | | Lavelle | III sallide | ravellell a | Favelliell Sulface Favelliell Sulficial e Malerial | Comple | odillple | Sample Moistale | Fallicle Size Alialysis | rapide alla | aldiyələ | | All | Attended Limits | 2 | |
|---|--|-----------------------|-------------------|-------------|--|-------------|--------------|--------------------|-------------------------|-------------|-------------|-------------|-------------------------------|------------------|---------------------|--|
| 2 | Testhole Location | Туре | Thickness (mm) | Туре | Thickness (mm) | Description | Depth (m) | Content Gravel (%) | Gravel (%) | Sand (%) | Silt (%) | Clay (%) | Liquid Plastic Limit Limit | Plastic Limit | Plasticity Index | |
| | At property line between 786 and 770 Inkster Boulevard 1 m from south side of alley | Concrete | 220 | Clay Fill | 1380 | 1 | | ī | | II. | ıı. | E | r | | , | |
| | At property line between 754 and 758 Inkster Boulevard 1 m from south side of alley | Asphalt / Concrete | 30 / 200 | Clay Fill | 1070 | Clay Fill | 9.0 | 42 | 0.2 | 2.3 | 23.2 | 74.3 | 78 | 22 | 56 | |
| | At property line between 742 and 744 Inkster Boulevard 1 m from south side of alley | Asphalt / Concrete | 20 / 190 | Clay Fill | 790 | T. | (1) | (1) | 9 1 2 | Ü | 315 | (8) | 300 | 9 L 2 | E r E | |
| | At property line between 732 and 734 Inkster Boulevard Asphalt / 1 in from south side of alley | Asphalt / Concrete | 20 / 180 | Clay Fill | 002 | Ē | r. | Œ | ı | 9 | r | ŗ | | | r | |

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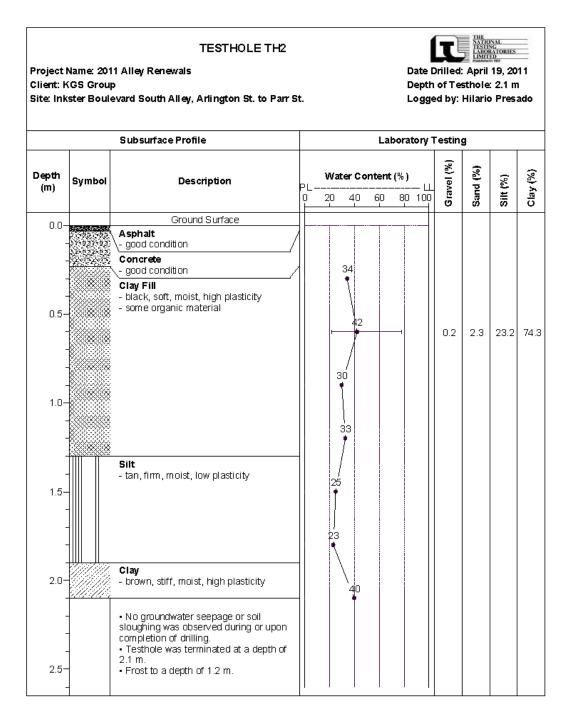
Test Hole Log #1 for Inkster Blvd. South Alley

TESTHOLE TH1

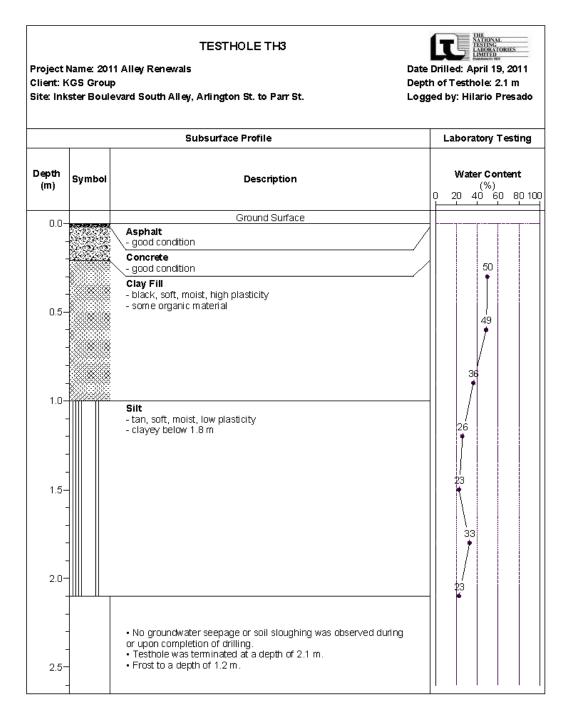
Project Name: 2011 Alley Renewals Client: KGS Group Site: Inkster Boulevard South Alley, Arlington St. to Parr St.

| Subsurface Profile | | | Laboratory Testing |
|-----------------------------|-----------|---|-------------------------------------|
| Depth (m) | Symbol | Description | Water Content (%) 0 20 40 60 80 100 |
| | | Ground Surface | |
| -0.0 - - | 3,793,793 | Concrete - good condition | |
| - 0.5- - - - | | Clay Fill - black, soft, moist, high plasticity - some organic material - stiff below 1.2 m - brown below 1.2 m | 32 34 34 30 |
| 1.0- - - - 1.5- | | | 32 † 31 |
| - | | Silt - tan, soft, moist, low plasticity | 24 |
| 2.0- - - | | Clay - brown, stiff, moist, high plasticity | 33 |
| 2.5- - | | | |

Test Hole Log #2 for Inkster Blvd. South Alley



Test Hole Log #3 for Inkster Blvd. South Alley



Test Hole Log #4 for Inkster Blvd. South Alley

TESTHOLE TH4 Project Name: 2011 Alley Renewals Date Drilled: April 19, 2011 Client: KGS Group Depth of Testhole: 2.1 m Site: Inkster Boulevard South Alley, Arlington St. to Parr St. Logged by: Hilario Presado Subsurface Profile Laboratory Testing Water Content Depth Symbol Description (m) (%) 20 40 60 80 100 Ground Surface 0.0-Asphalt - good condition Concrete - good condition 35 Clay Fill - black, soft, moist, high plasticity - trace organic material 0.5 38 3 1.0 - tan, soft, moist, medium plasticity 32 39 - brown, stiff, moist, high plasticity 43 2.0 45 • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Testhole was terminated at a depth of 2.1 m.

· Frost to a depth of 1.2 m.

2.5

Pavement Core Photos



INKSTER BOULEVARD SOUTH ALLEY ARLINGTON STREET TO PARR STREET



Core sample from Testhole TH1



Core sample from Testhole TH3



Core sample from Testhole TH2



Core sample from Testhole TH4