

# **APPENDIX 'A'**

# **GEOTECHNICAL REPORT**

## APPENDIX 'A' - GEOTECHNICAL REPORT

### TABLE OF CONTENTS

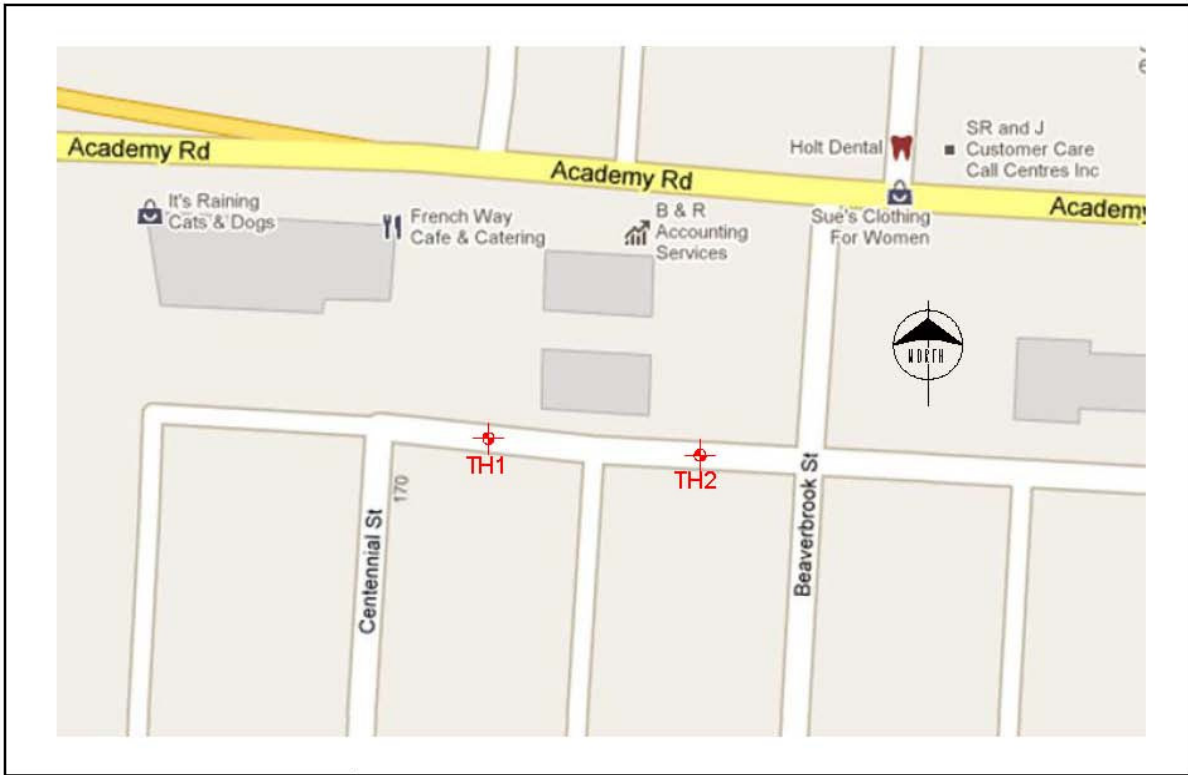
<b>GEOTECHNICAL REPORT FOR ACADEMY ROAD SOUTH ALLEY</b>	<b>1</b>
Test Hole Locations	1
Summary of Core Samples	2
Test Hole Log #1 for Academy Road South Alley	3
Test Hole Log #2 for Academy Road South Alley	4
Pavement Core Photos	5
<b>GEOTECHNICAL REPORT FOR DORCHESTER AVE. / MCMILLAN AVE. ALLEY</b>	<b>6</b>
Test Hole Locations	6
Summary of Core Samples	7
Test Hole Log #1 for Dorchester Ave. / McMillan Ave. Alley	8
Test Hole Log #2 for Dorchester Ave. / McMillan Ave. Alley	9
Test Hole Log #3 for Dorchester Ave. / McMillan Ave. Alley	10
Test Hole Log #4 for Dorchester Ave. / McMillan Ave. Alley	11
Pavement Core Photos	12
<b>GEOTECHNICAL REPORT FOR WILMOT PL. / NASSAU ST. ALLEY</b>	<b>13</b>
Test Hole Locations	13
Summary of Core Samples	14
Test Hole Log #1 for Wilmot Pl. / Nassau St. Alley	15
Test Hole Log #2 for Wilmot Pl. / Nassau St. Alley	16
Test Hole Log #3 for Wilmot Pl. / Nassau St. Alley	17
Pavement Core Photos	18
<b>GEOTECHNICAL REPORT FOR STRADBROOK AVE. NORTH ALLEY</b>	<b>19</b>
Test Hole Locations	19
Summary of Core Samples	20
Test Hole Log #1 for Stradbrook Ave. North Alley	21
Test Hole Log #2 for Stradbrook Ave. North Alley	22
Pavement Core Photos	23
<b>GEOTECHNICAL REPORT FOR WESTMINSTER AVE. / PURCELL AVE. ALLEY</b>	<b>24</b>
Test Hole Locations	24
Summary of Core Samples	25
Test Hole Log #1 for Westminster Ave. / Purcell Ave. Alley	26
Test Hole Log #2 for Westminster Ave. / Purcell Ave. Alley	27
Test Hole Log #3 for Westminster Ave. / Purcell Ave. Alley	28
Test Hole Log #4 for Westminster Ave. / Purcell Ave. Alley	29
Pavement Core Photos	30
<b>GEOTECHNICAL REPORT FOR ASHBURN ST. / VALOUR RD. ALLEY</b>	<b>31</b>
Test Hole Locations	31
Summary of Core Samples	32
Test Hole Log #1 for Ashburn St. / Valour Rd. Alley	33
Test Hole Log #2 for Ashburn St. / Valour Rd. Alley	34
Test Hole Log #3 for Ashburn St. / Valour Rd. Alley	35
Test Hole Log #4 for Ashburn St. / Valour Rd. Alley	36
Test Hole Log #5 for Ashburn St. / Valour Rd. Alley	37
Test Hole Log #6 for Ashburn St. / Valour Rd. Alley	38
Test Hole Log #7 for Ashburn St. / Valour Rd. Alley	39
Test Hole Log #8 for Ashburn St. / Valour Rd. Alley	40
Pavement Core Photos #1	41


Pavement Core Photos #2	42
<b>GEOTECHNICAL REPORT FOR DOWNING ST. / DOMINION ST. ALLEY</b>	<b>43</b>
Test Hole Locations	43
Summary of Core Samples	44
Test Hole Log #1 for Downing St. / Dominion St. Alley	45
Test Hole Log #2 for Downing St. / Dominion St. Alley	46
Test Hole Log #3 for Downing St. / Dominion St. Alley	47
Test Hole Log #4 for Downing St. / Dominion St. Alley	48
Pavement Core Photos	49
<b>GEOTECHNICAL REPORT FOR GARFIELD ST. / SHERBURN ST. ALLEY</b>	<b>50</b>
Test Hole Locations	50
Summary of Core Samples	51
Test Hole Log #1 for Garfield St. / Sherburn St. Alley	52
Test Hole Log #2 for Garfield St. / Sherburn St. Alley	53
Test Hole Log #3 for Garfield St. / Sherburn St. Alley	54
Test Hole Log #4 for Garfield St. / Sherburn St. Alley	55
Test Hole Log #5 for Garfield St. / Sherburn St. Alley	56
Test Hole Log #6 for Garfield St. / Sherburn St. Alley	57
Test Hole Log #7 for Garfield St. / Sherburn St. Alley	58
Test Hole Log #8 for Garfield St. / Sherburn St. Alley	59
Pavement Core Photos #1	60
Pavement Core Photos #2	61
<b>GEOTECHNICAL REPORT FOR CHARLES ST. / MAIN ST. ALLEY</b>	<b>62</b>
Test Hole Locations	62
Summary of Core Samples	63
Test Hole Log #1 for Charles St. / Main St. Alley	64
Test Hole Log #2 for Charles St. / Main St. Alley	65
Test Hole Log #3 for Charles St. / Main St. Alley	66
Pavement Core Photos	67
<b>GEOTECHNICAL REPORT FOR INKSTER BLVD. SOUTH ALLEY</b>	<b>68</b>
Test Hole Locations	68
Summary of Core Samples	69
Test Hole Log #1 for Inkster Blvd. South Alley	70
Test Hole Log #2 for Inkster Blvd. South Alley	71
Test Hole Log #3 for Inkster Blvd. South Alley	72
Test Hole Log #4 for Inkster Blvd. South Alley	73
Pavement Core Photos	74

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

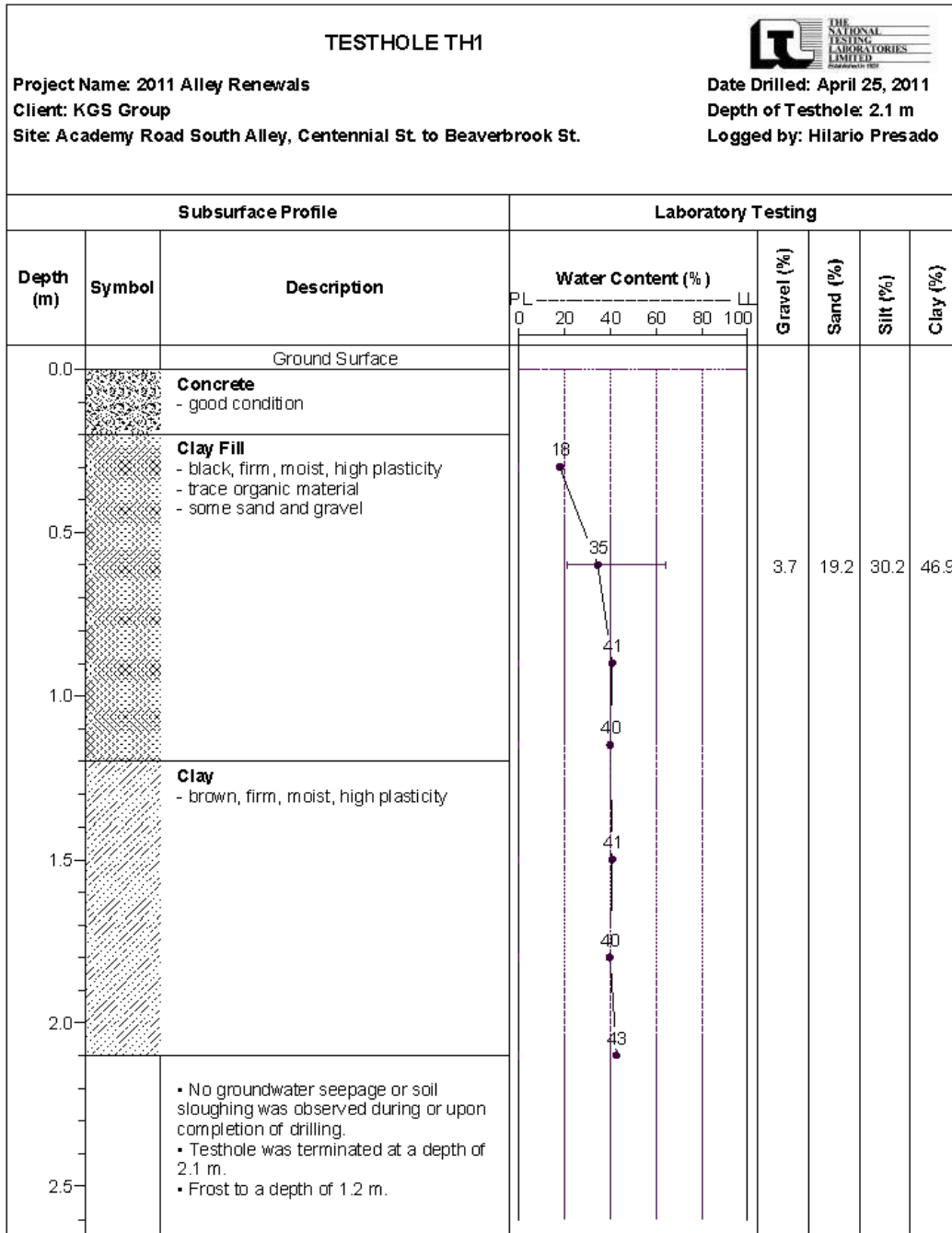
### Test Hole Locations



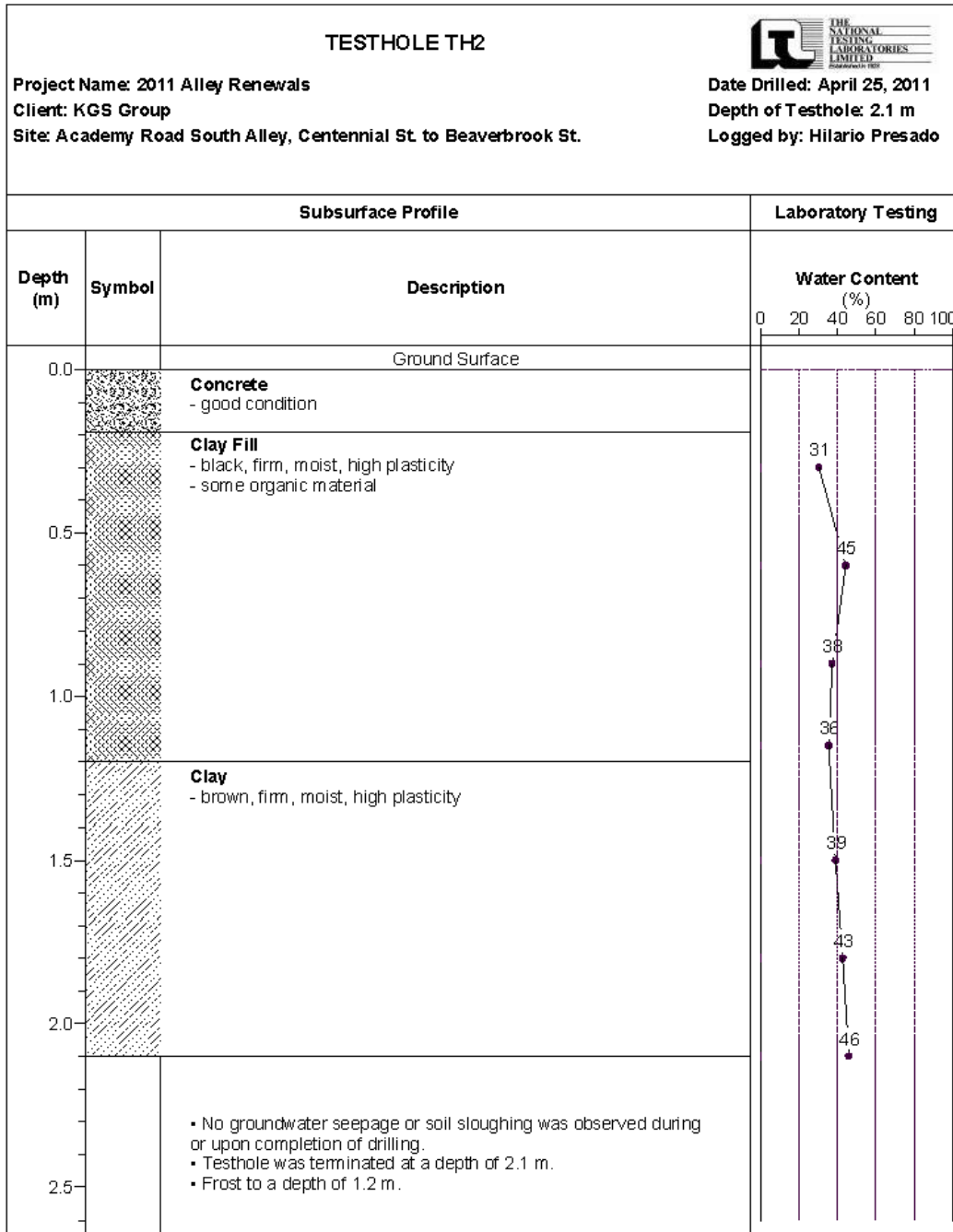
 <p><b>THE NATIONAL TESTING LABORATORIES LIMITED</b>  <small>Established in 1923</small></p>	Project No. KGS-1111	Drawn by: NB	Figure: 1	<b>Testhole Location Plan</b> <b>Academy Road South Alley</b> <b>Centennial St. to Beaverbrook St.</b> <b>2011 Alley Renewals</b>
	Date: May 6, 2011	Reviewed by: DF	Scale: NTS	



### Test Hole Log #1 for Academy Road South Alley



### Test Hole Log #2 for Academy Road South Alley



## Pavement Core Photos



### ACADEMY ROAD SOUTH ALLEY CENTENNIAL STREET TO BEAVERBROOK STREET



Core sample from Testhole TH1

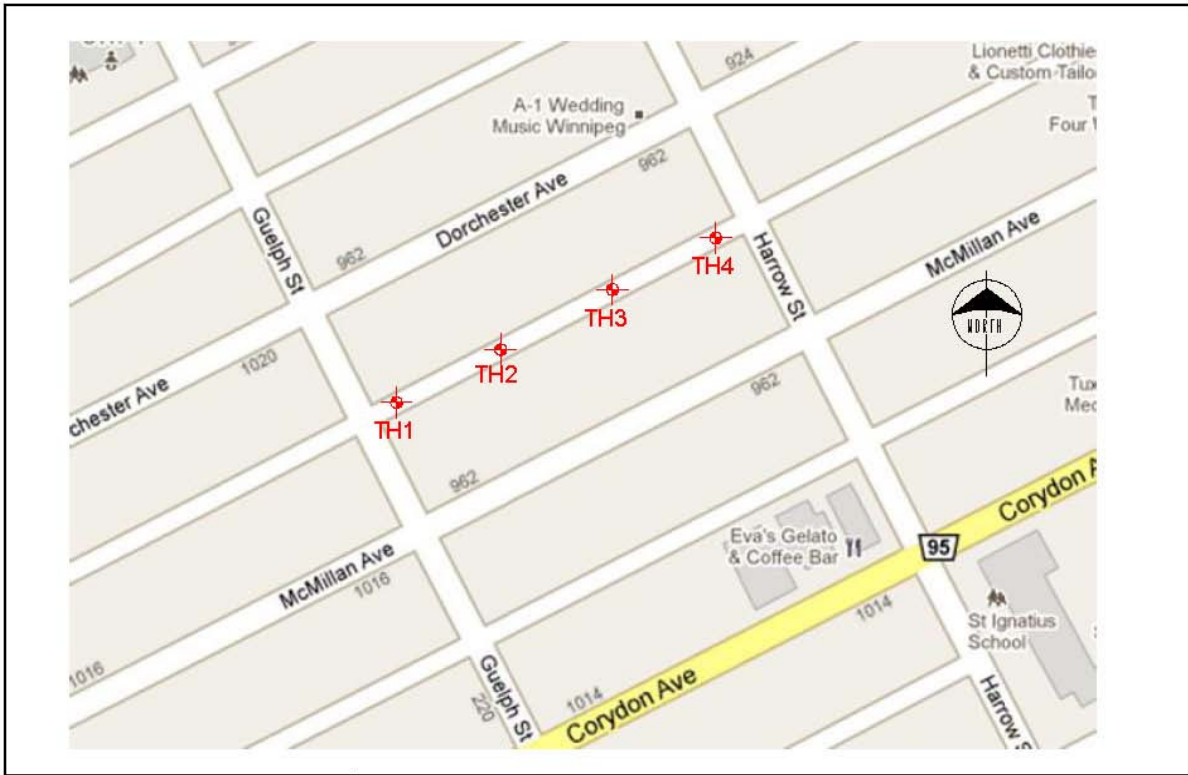



Core sample from Testhole TH2



**Geotechnical Report for Dorchester Ave. / McMillan Ave. Alley**

**Test Hole Locations**



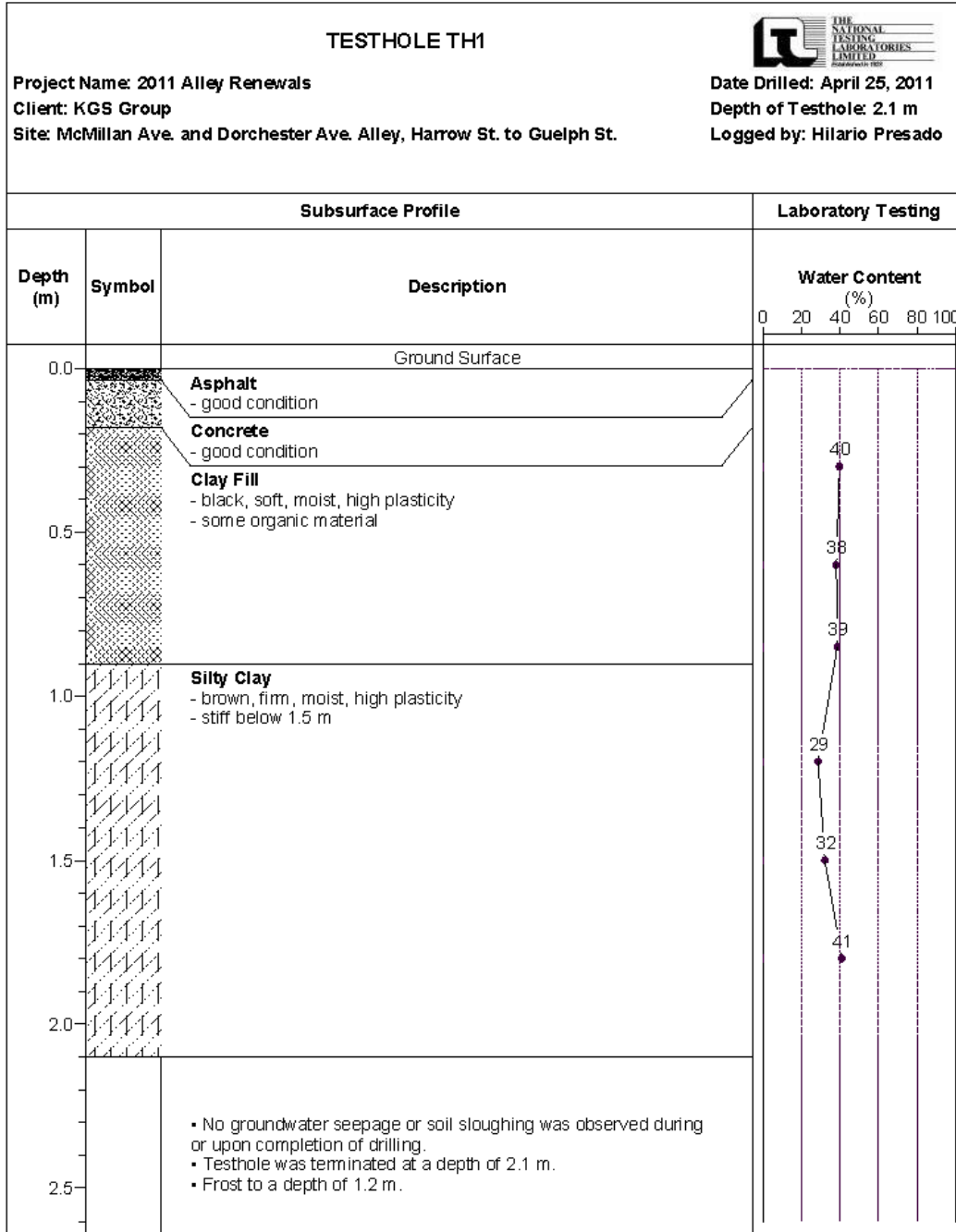
 <p><b>THE        NATIONAL        TESTING        LABORATORIES        LIMITED</b>  <i>Established in 1923</i></p>	Project No. KGS-1111	Drawn by: NB	Figure: 1	<b>Testhole Location Plan</b> McMillan Ave. and Dorchester Ave. Alley Harrow St. to Guelph St. 2011 Alley Renewals
	Date: May 10, 2011	Reviewed by: DF	Scale: NTS	

## Summary of Core Samples

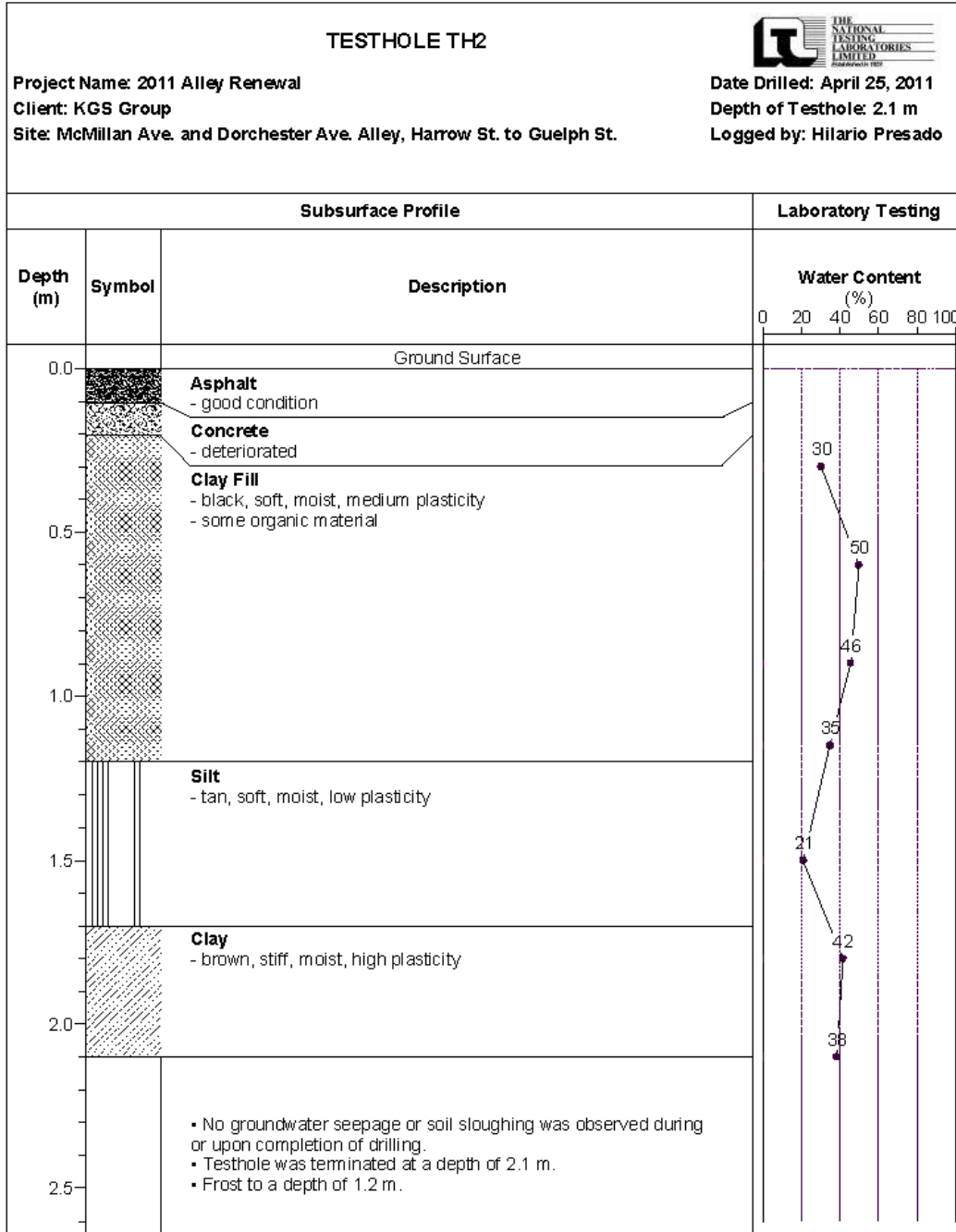
### McMillan Avenue and Dorchester Avenue Alley Harrow Street to Guelph Street

Testhole ID	Testhole Location	Pavement Surface		Pavement Structure Material		Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	At property line between 998 and 1002 Dorchester Avenue 1 m from north side of alley	Asphalt / Concrete	35 / 145	Clay Fill	720	-	-	-	-	-	-	-	-	-	-
TH2	At property line between 990 and 986 Dorchester Avenue 1 m from north side of alley	Asphalt / Concrete	105 / 100	Clay Fill	995	-	-	-	-	-	-	-	-	-	-
TH3	At property line between 980 and 984 Dorchester Avenue 1 m from north side of alley	Asphalt / Concrete	55 / 160	Clay Fill	1085	-	-	-	-	-	-	-	-	-	-
TH4	At property line of 976 Dorchester Avenue 1 m from south side of alley	Asphalt / Concrete	75 / 80	Clay Fill	745	Clay Fill	0.6	32	0.2	4.9	50.1	44.8	49	17	32
						Silty Clay	1.2	31	0.6	2.8	57.3	39.3	39	16	26

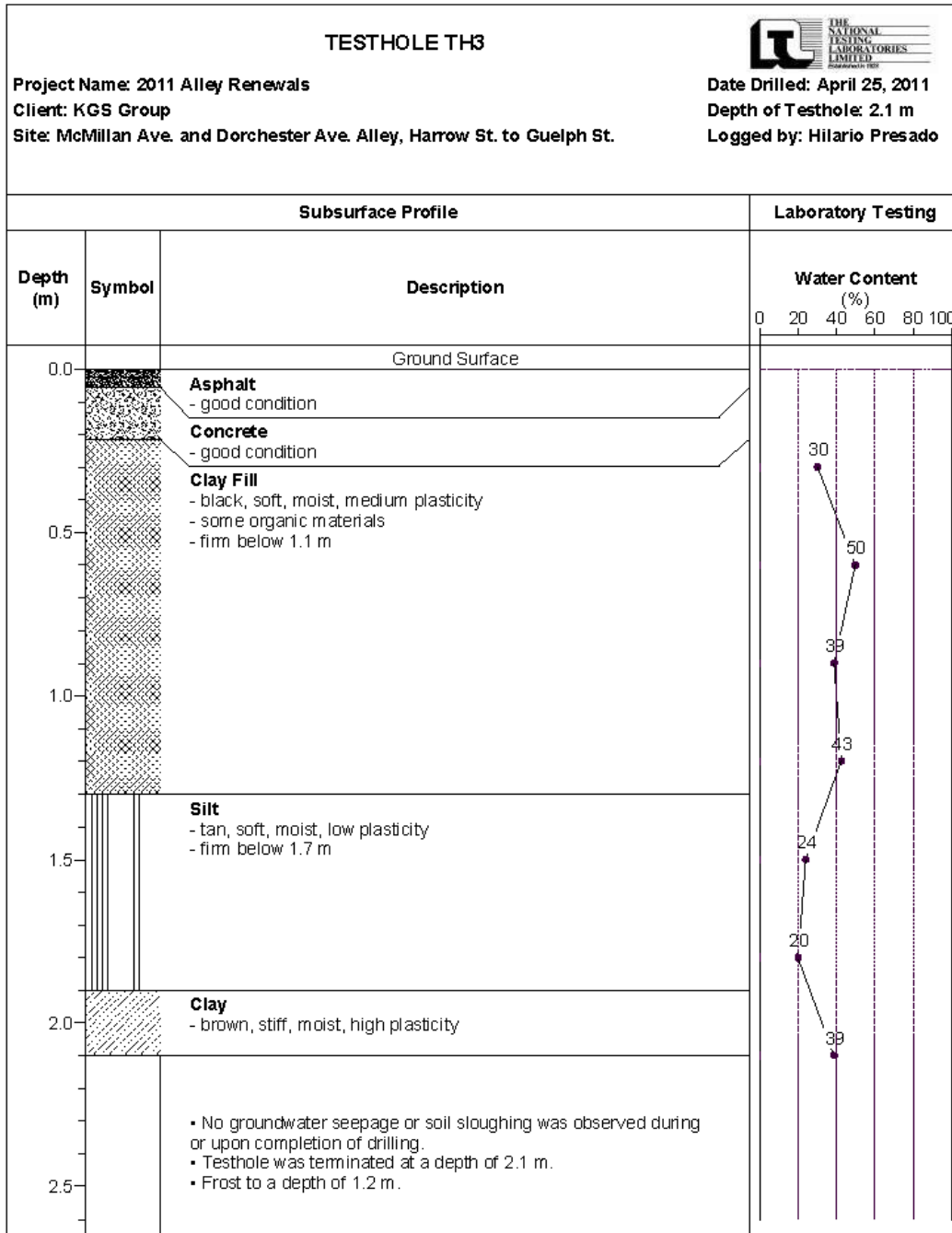
**Test Hole Log #1 for Dorchester Ave. / McMillan Ave. Alley**



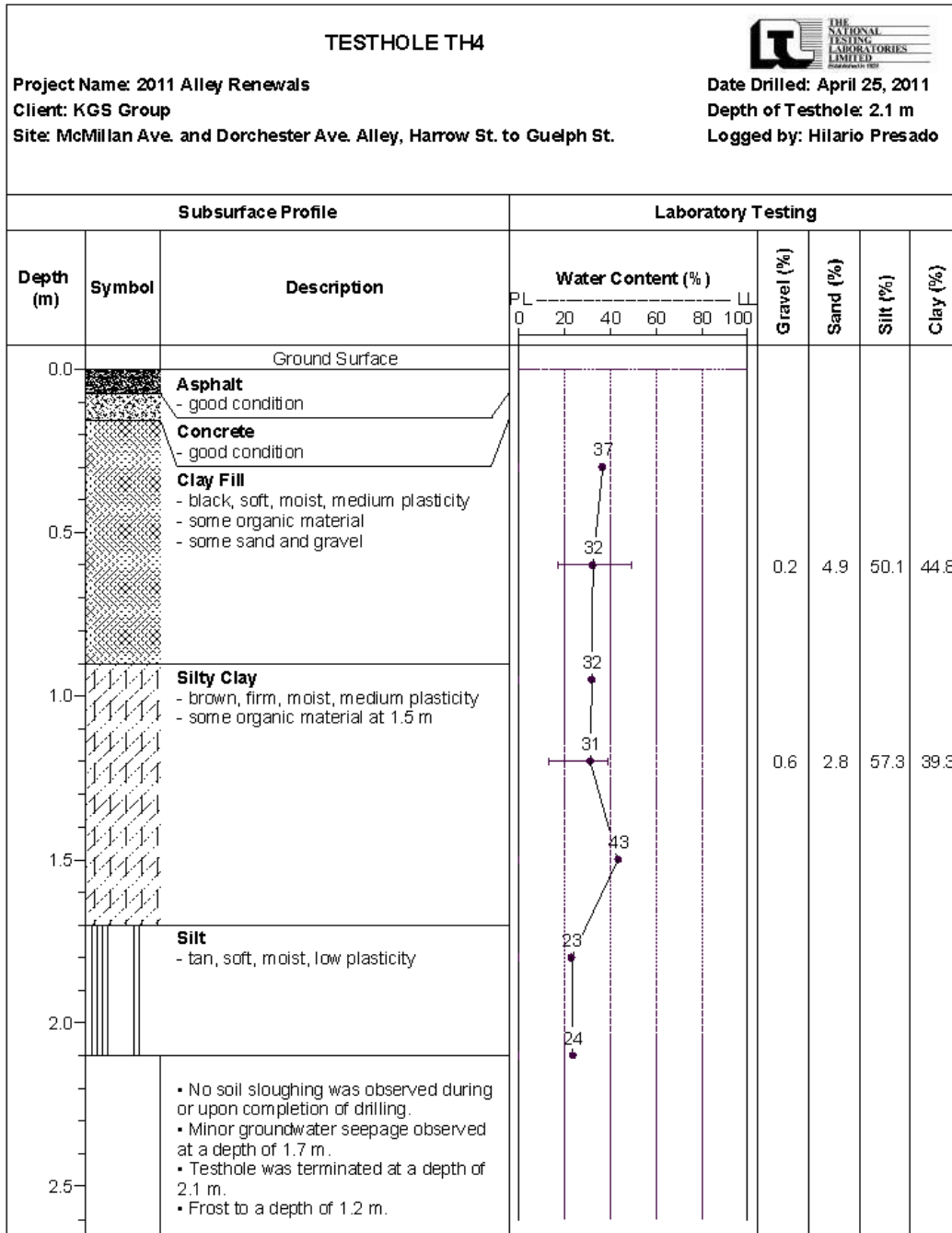
**Test Hole Log #2 for Dorchester Ave. / McMillan Ave. Alley**



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



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



### Pavement Core Photos



#### MCMILLAN AVENUE AND DORCHESTER AVENUE ALLEY HARROW STREET TO GUELPH STREET



Core sample from Testhole TH1



Core sample from Testhole TH2



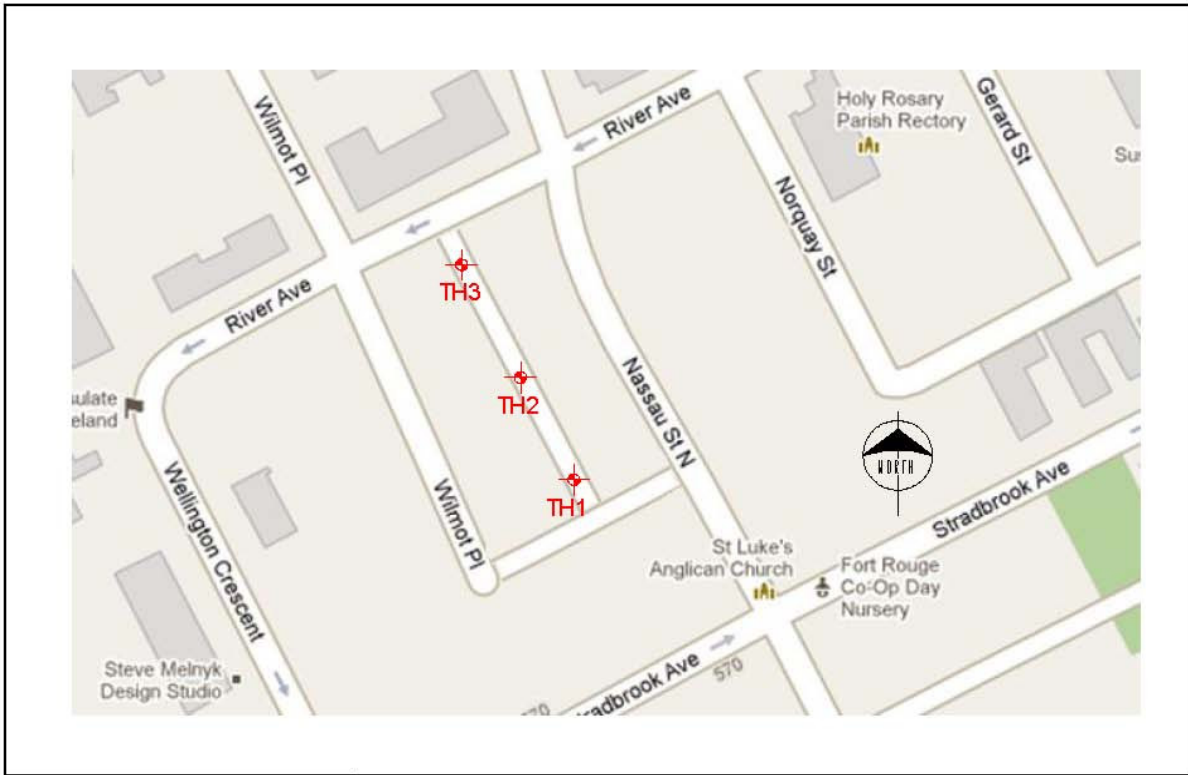
Core sample from Testhole TH3




Core sample from Testhole TH4

## Geotechnical Report for Wilmot Pl. / Nassau St. Alley

### Test Hole Locations










 <p><b>THE          NATIONAL          TESTING          LABORATORIES          LIMITED</b>  <i>Established in 1923</i></p>	Project No. KGS-1111	Drawn by: NB	Figure: 1	<b>Testhole Location Plan</b> Wilmot Place and Nassau St. Alley Stradbrook Ave. North Alley to River Ave 2011 Alley Renewals
	Date: May 9, 2011	Reviewed by: DF	Scale: NTS	

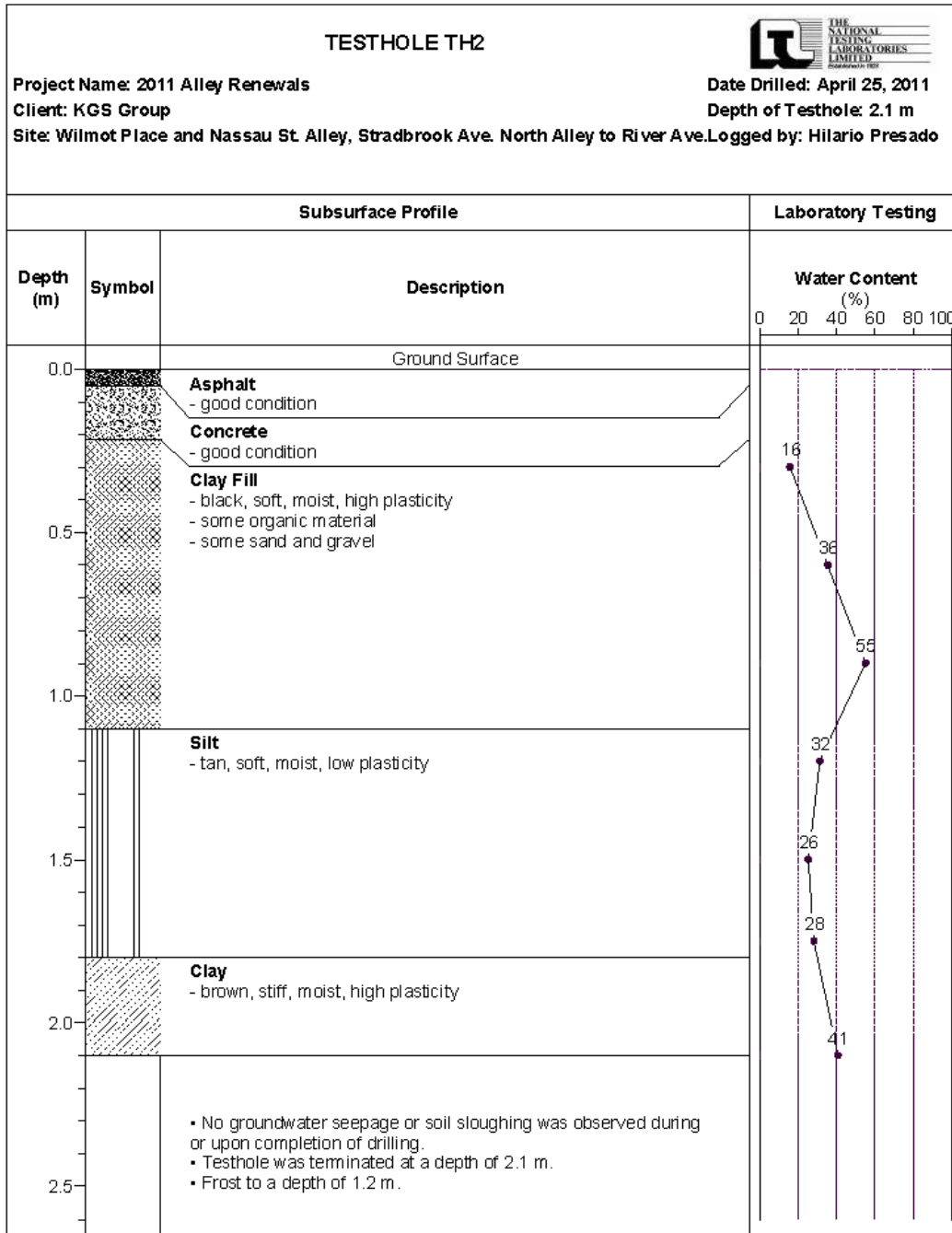




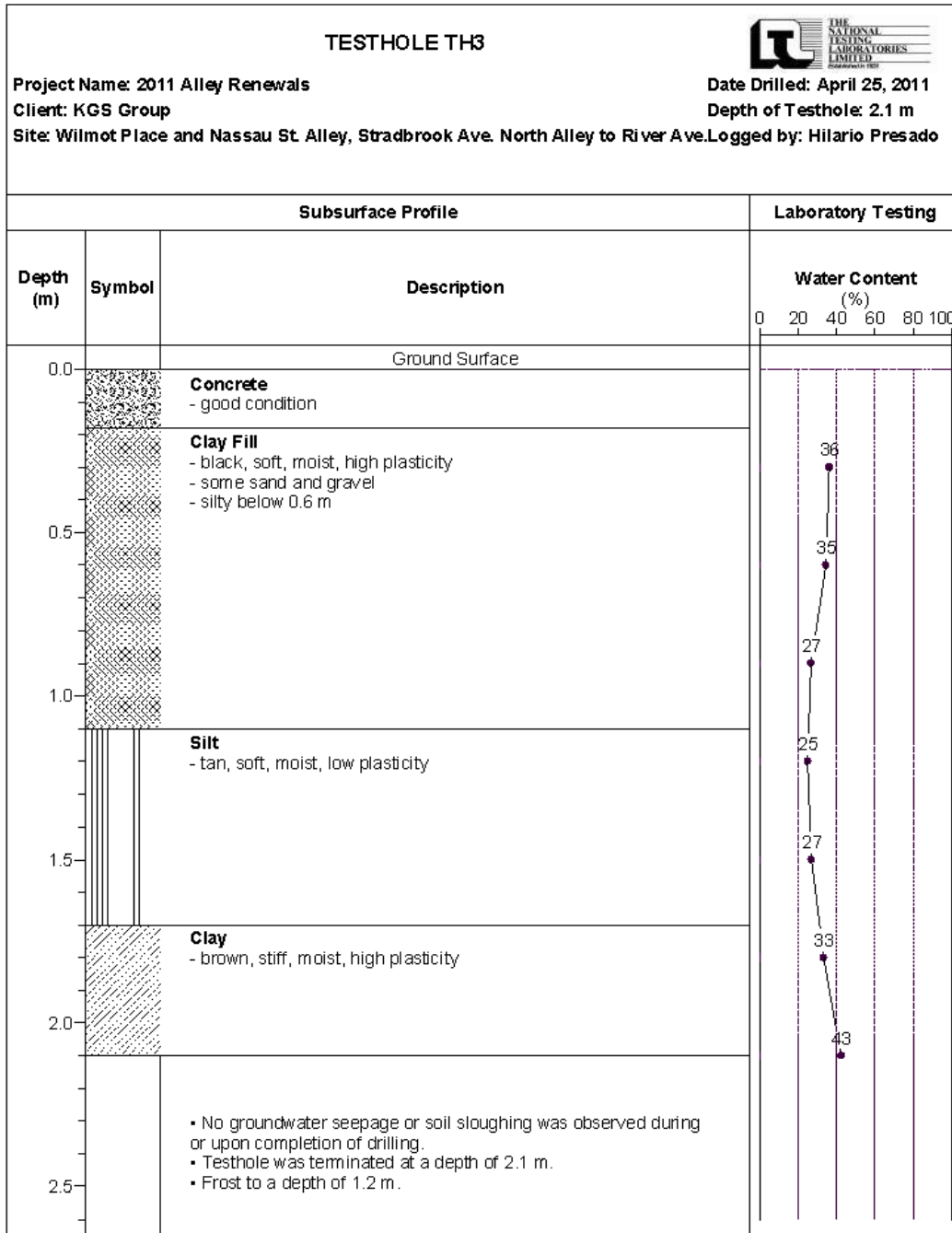
**Test Hole Log #1 for Wilmot Pl. / Nassau St. Alley**

TESTHOLE TH1								
Project Name: 2011 Alley Renewals Client: KGS Group Site: Wilmot Place and Nassau St. Alley, Stradbrook Ave. North Alley to River Ave.			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 (%)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)
			PL	LL				
0.0		Ground Surface						
0.0 - 0.3		<b>Concrete</b> - good condition						
0.3 - 0.5		<b>Granular Fill</b> - black, moist, compact - some organic material - clayey below 0.5 m	22		46.6	17.9	20.6	14.9
0.5 - 1.0		<b>Silt</b> - tan, soft, moist, low plasticity	29		0.0	3.1	74.0	22.9
1.0 - 1.5		<b>Clay</b> - brown, stiff, moist, high plasticity	24					
1.5 - 2.0		<b>Silt</b> - tan, soft, moist, low plasticity	34					
2.0 - 2.1		<b>Clay</b> - brown, stiff, moist, high plasticity	24					
2.1		<ul style="list-style-type: none"> <li>No groundwater seepage or soil sloughing was observed during or upon completion of drilling.</li> <li>Testhole was terminated at a depth of 2.1 m.</li> <li>Frost to a depth of 1.2 m.</li> </ul>	32					

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



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



## Pavement Core Photos



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



Core sample from Testhole TH1



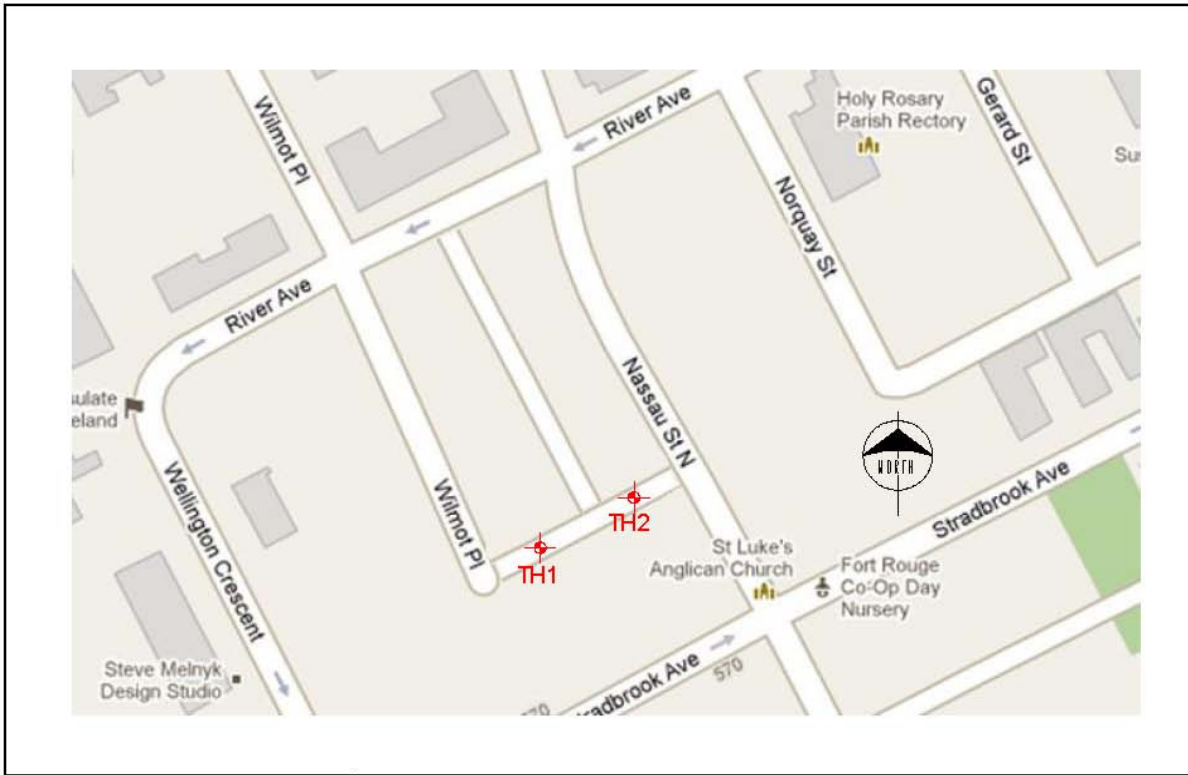
Core sample from Testhole TH2




Core sample from Testhole TH3

## Geotechnical Report for Stradbrook Ave. North Alley

### Test Hole Locations



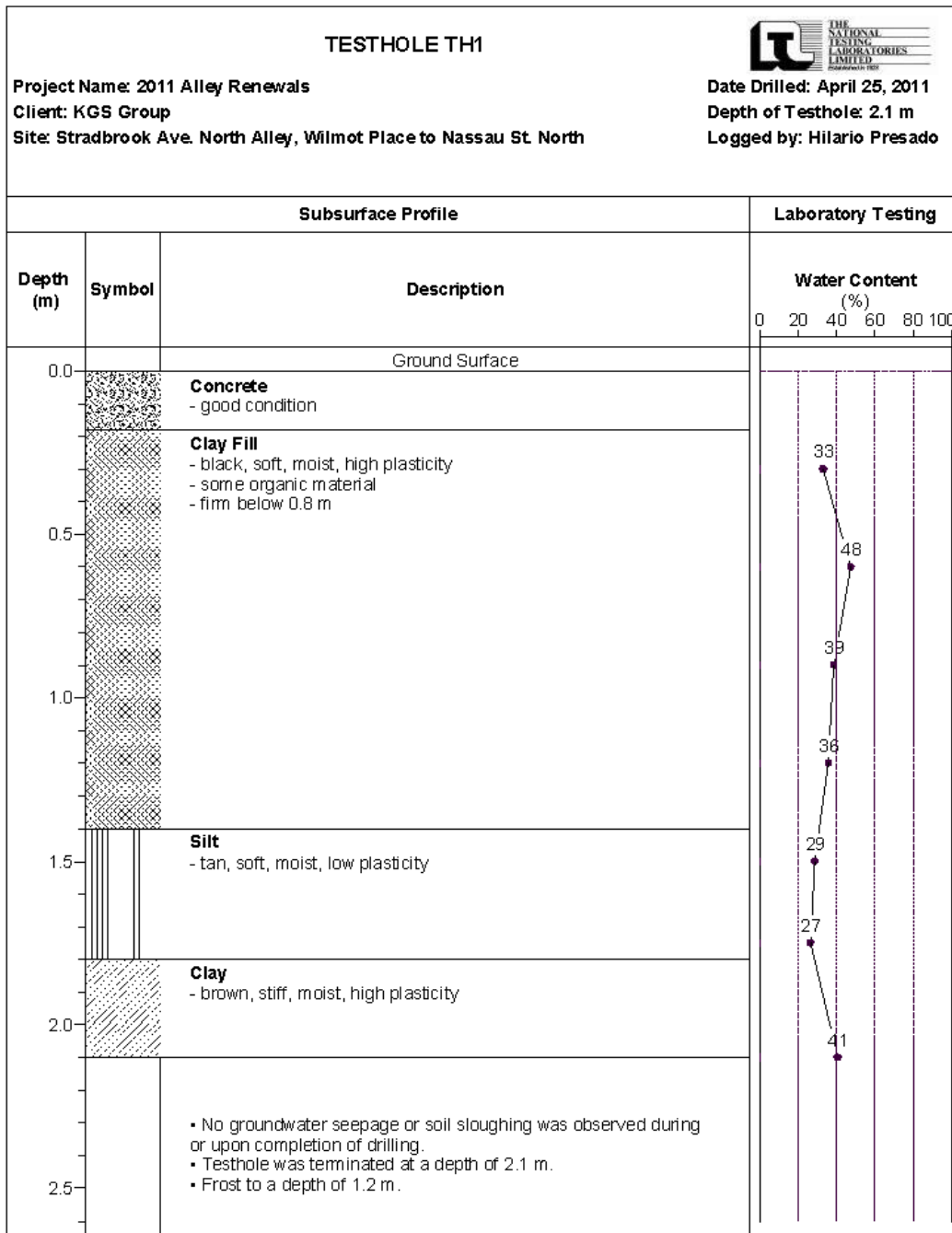
 <p><b>THE NATIONAL TESTING LABORATORIES LIMITED</b>  <small>Established in 1923</small></p>	Project No. KGS-1111	Drawn by: NB	Figure: 1	Testhole Location Plan Stradbrook Ave. North Alley Wilmot Place to Nassau St. North 2011 Alley Renewals
	Date: May 9, 2011	Reviewed by: DF	Scale: NTS	

### Summary of Core Samples

**Stradbrook Avenue North Alley  
 Wilmot Place to Nassau Street North**

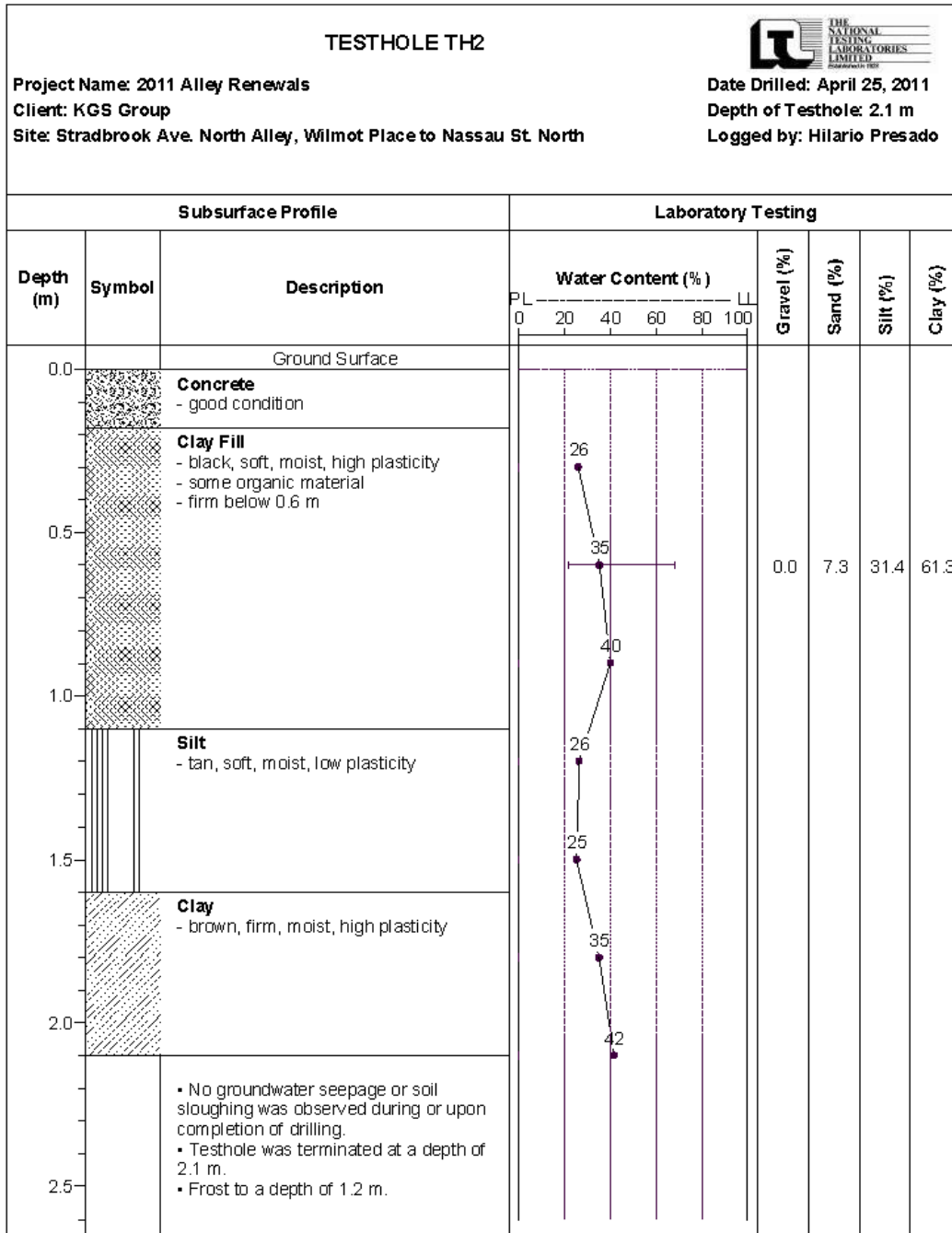
Testhole ID	Testhole Location	Pavement Surface		Pavement Structure Material		Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	18 m east of Wilmot Place 1 m from south side of alley	Concrete	180	Clay Fill	1220	-	-	-	-	-	-	-	-	-	-
TH2	54 m east of Wilmot Place 1 m from south side of alley	Concrete	180	Clay Fill	920	Clay Fill	0.6	35	0.0	7.3	31.4	61.3	68	22	46

### Test Hole Log #1 for Stradbrook Ave. North Alley





**Test Hole Log #2 for Stradbrook Ave. North Alley**



## Pavement Core Photos



### STRADBROOK AVENUE NORTH ALLEY WILMOT PLACE TO NASSAU STREET NORTH



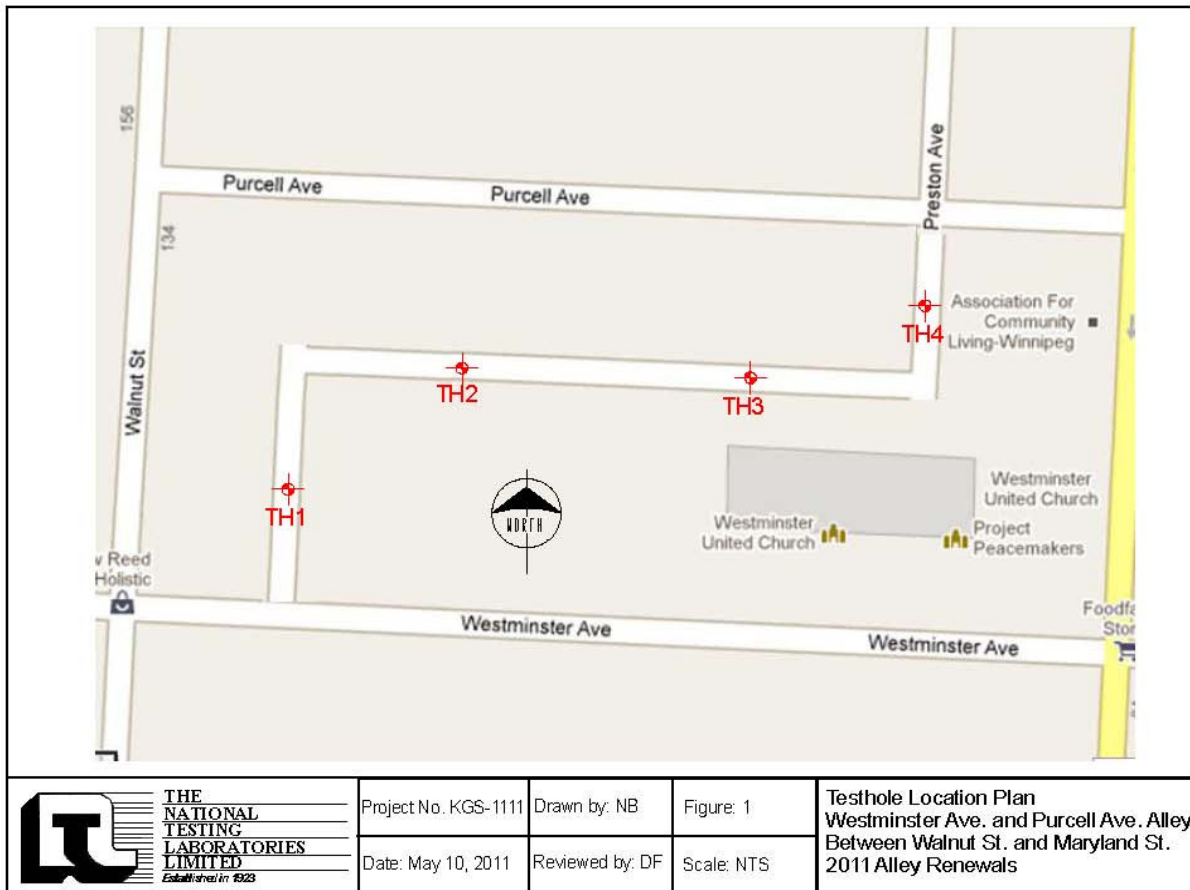
Core sample from Testhole TH1



Core sample from Testhole TH2

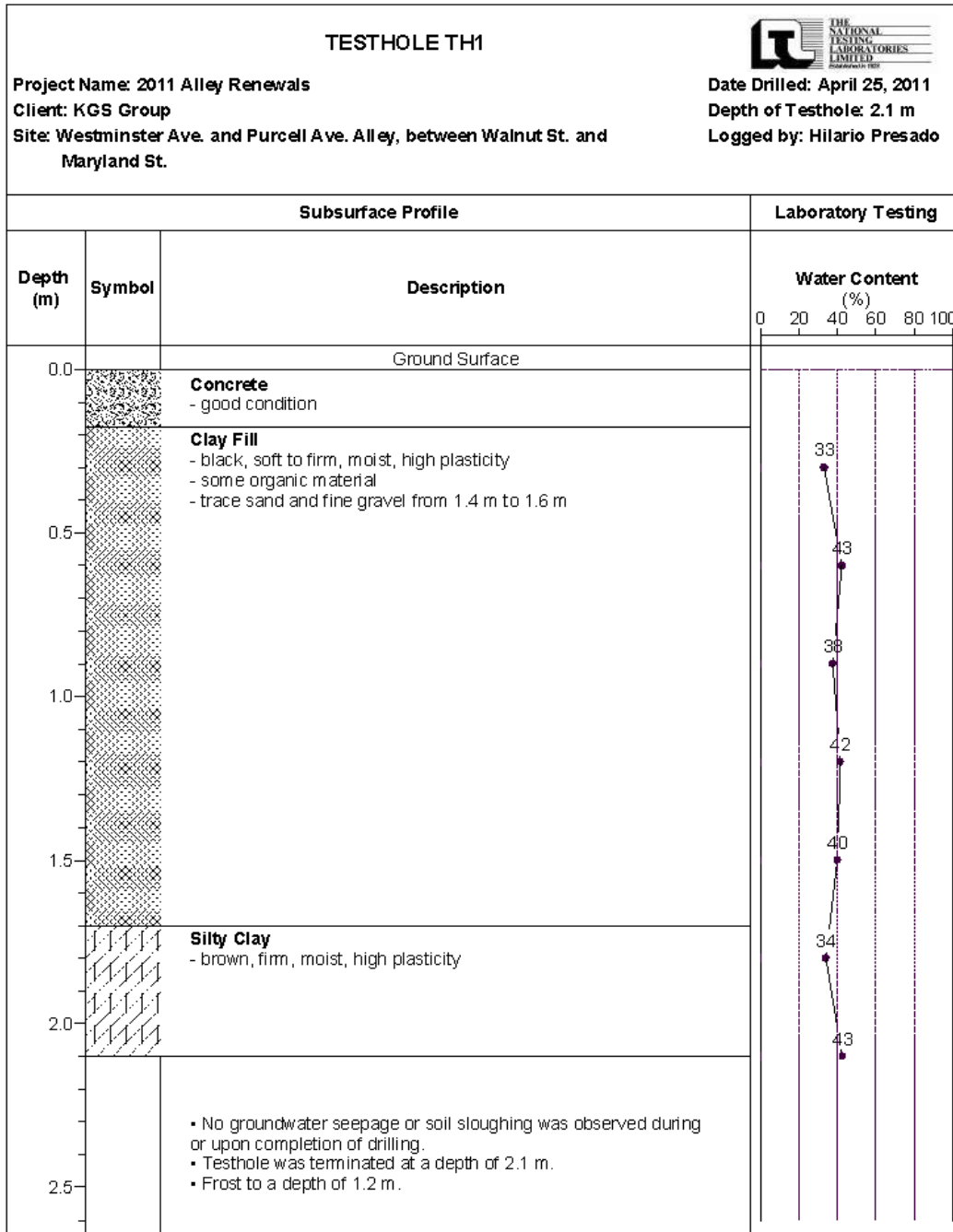
## Geotechnical Report for Westminster Ave. / Purcell Ave. Alley

### Test Hole Locations

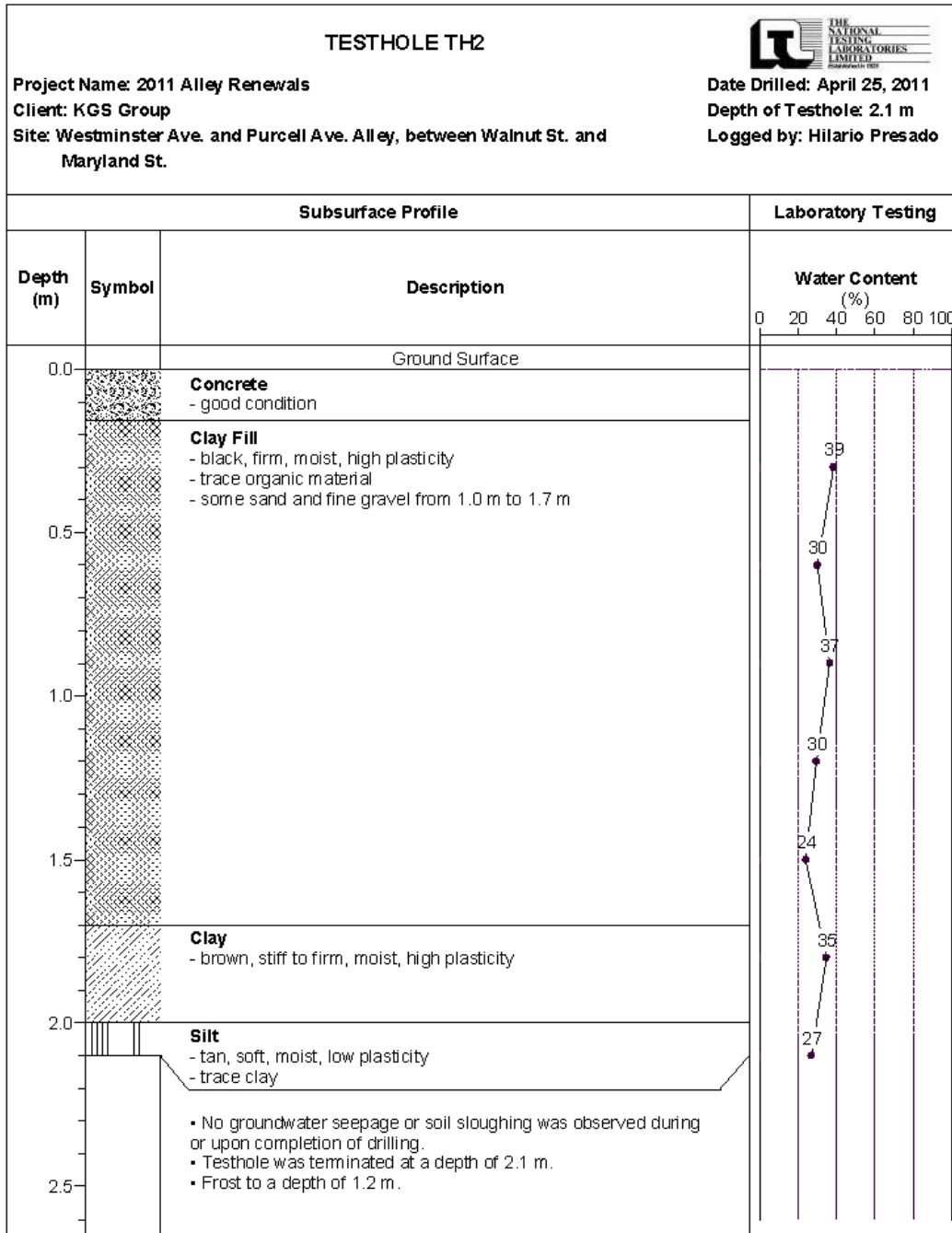




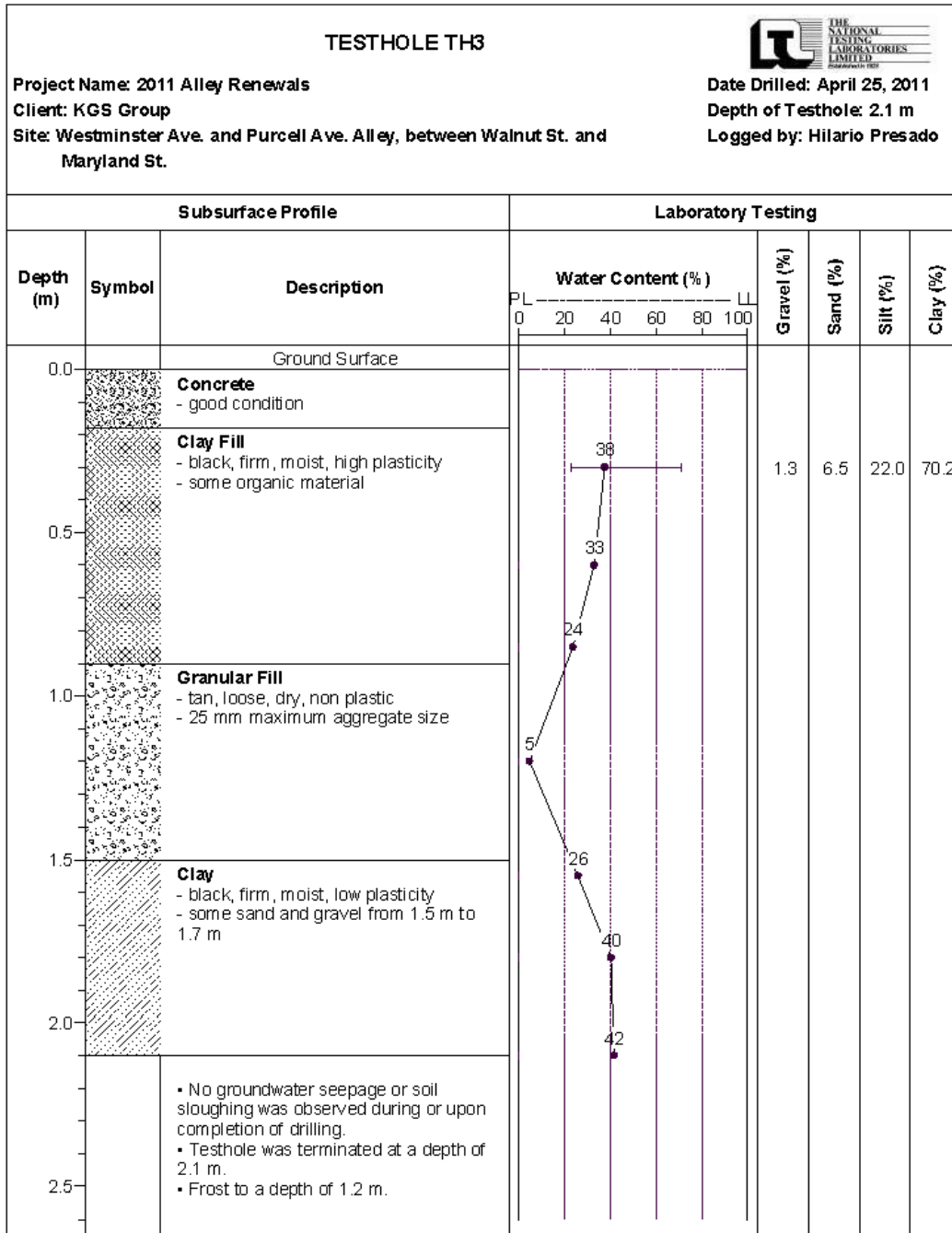
**Test Hole Log #1 for Westminster Ave. / Purcell Ave. Alley**



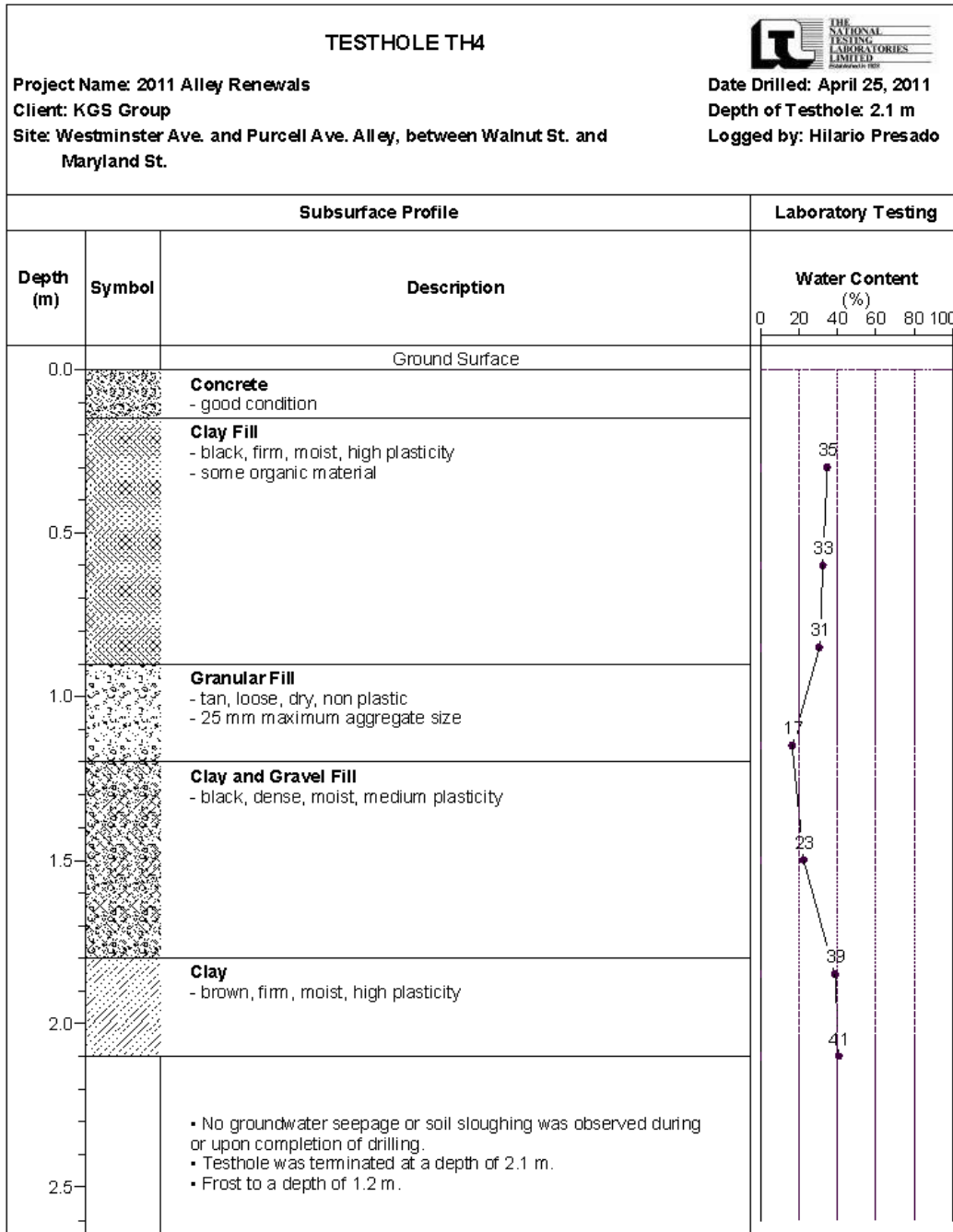
**Test Hole Log #2 for Westminster Ave. / Purcell Ave. Alley**



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



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





### Pavement Core Photos



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



Core sample from Testhole TH1



Core sample from Testhole TH2



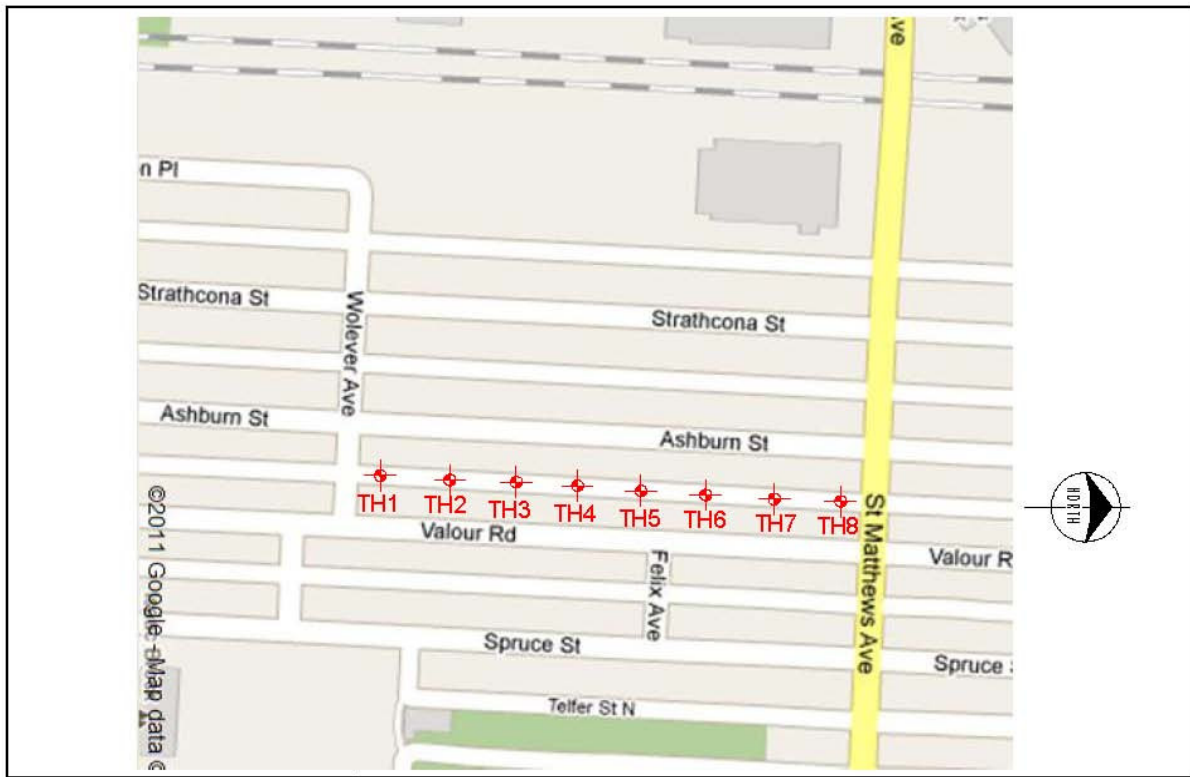
Core sample from Testhole TH3




Core sample from Testhole TH4

### Geotechnical Report for Ashburn St. / Valour Rd. Alley

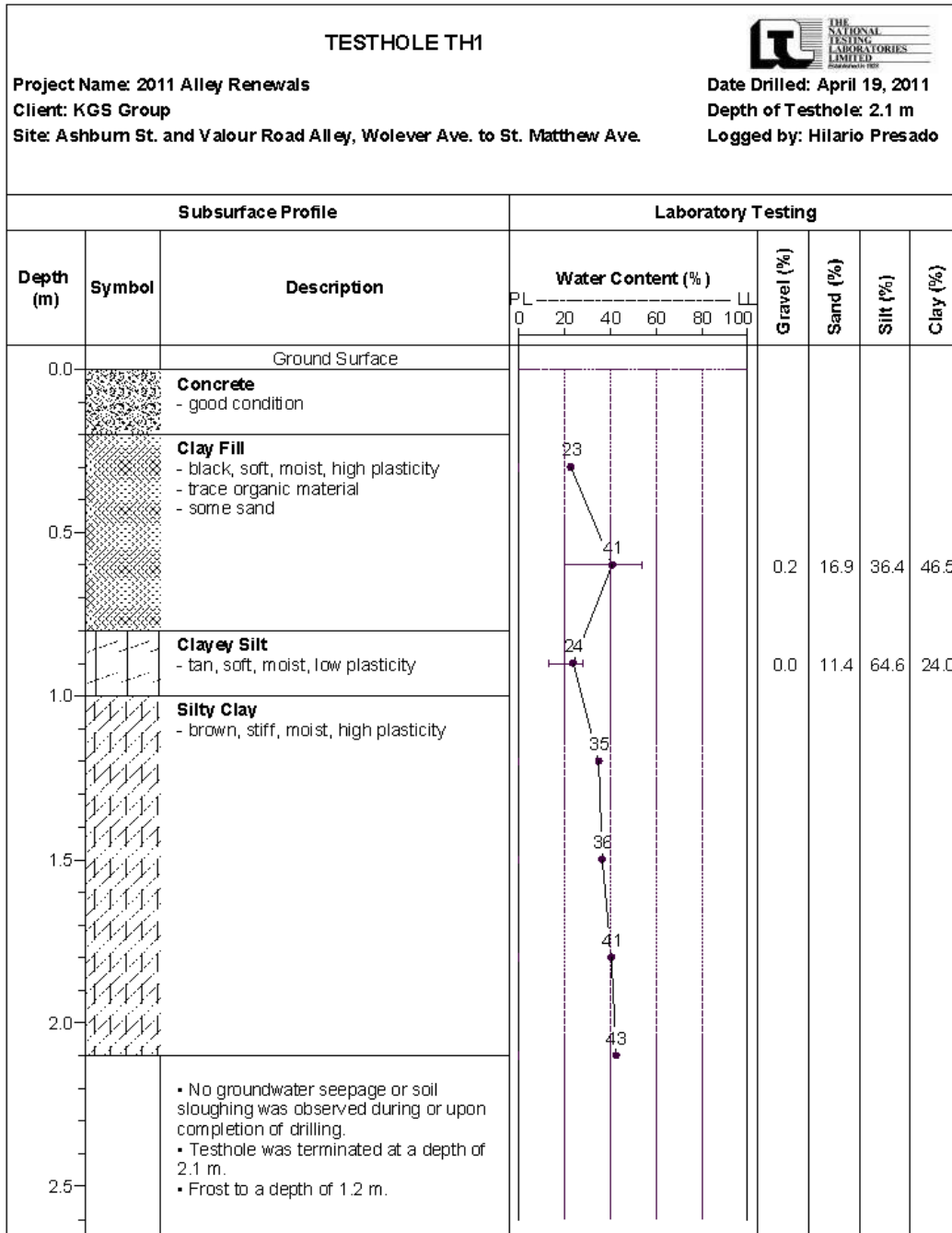
#### Test Hole Locations



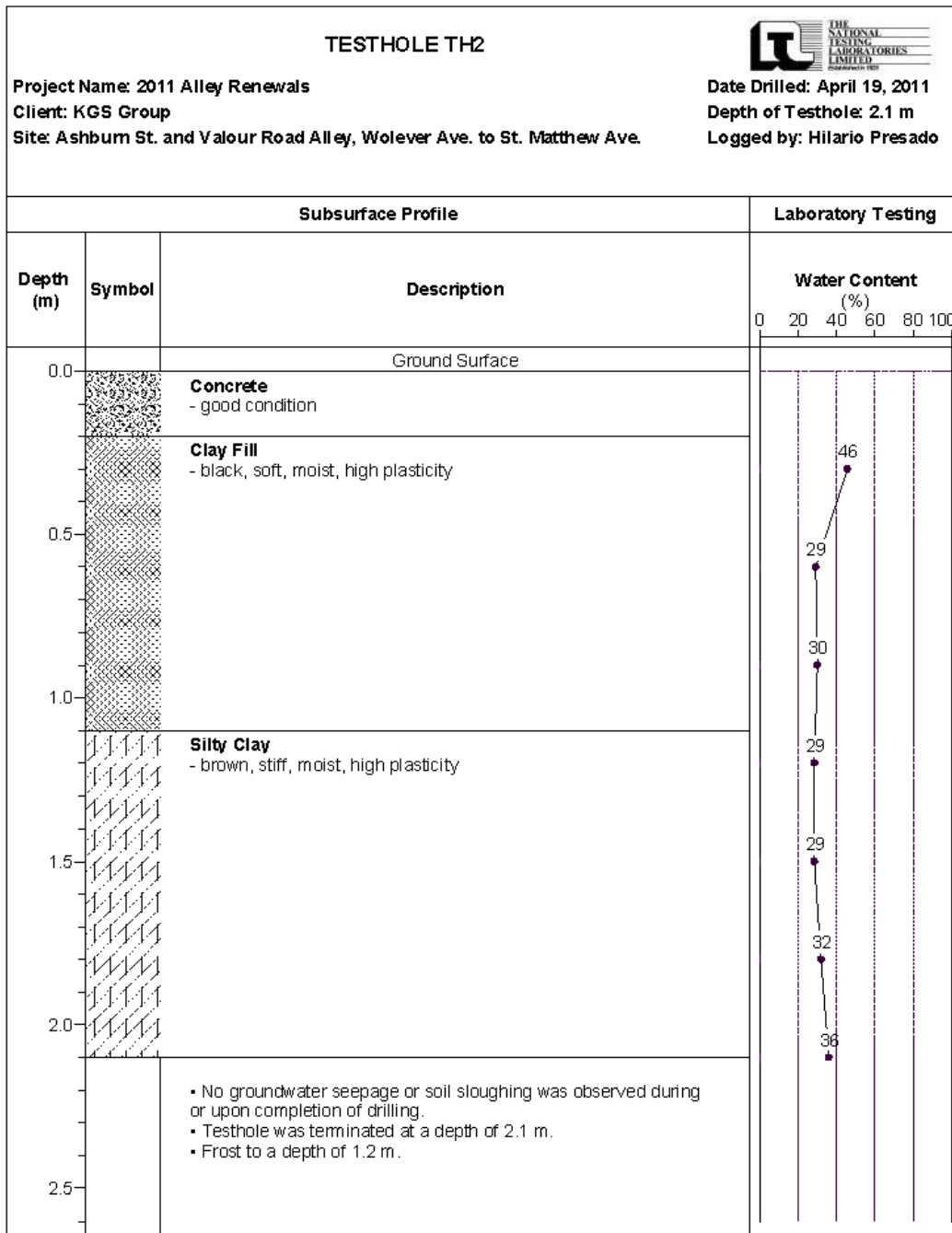
 <p><b>THE NATIONAL TESTING LABORATORIES LIMITED</b>  <small>Established in 1923</small></p>	Project No. KGS-1111	Drawn by: NB	Figure: 1	Testhole Location Plan Ashburn St. and Valour Road Alley Wolever Ave. to St. Matthews Ave. 2011 Alley Renewals
	Date: May 10, 2011	Reviewed by: DF	Scale: NTS	



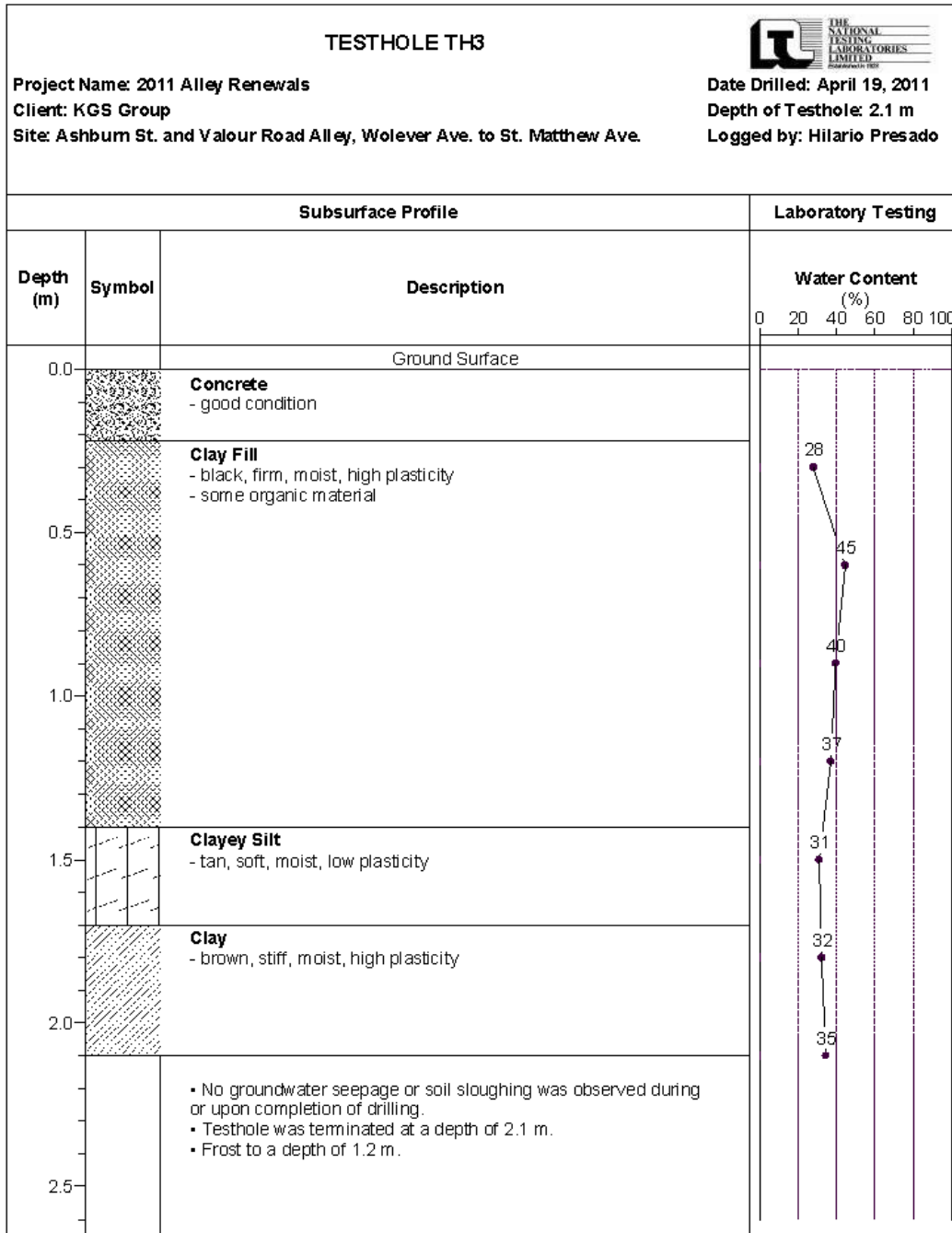
**Test Hole Log #1 for Ashburn St. / Valour Rd. Alley**



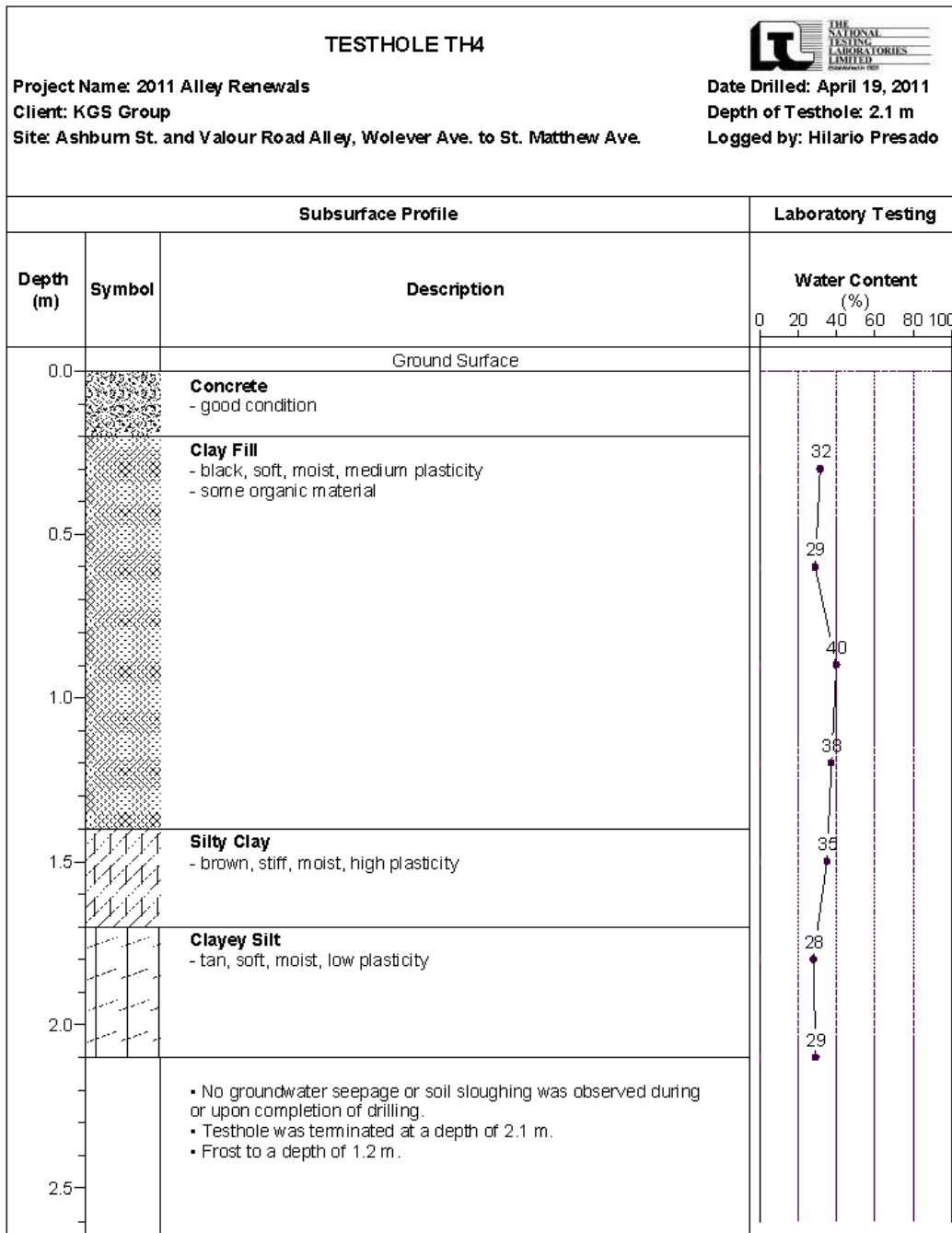
**Test Hole Log #2 for Ashburn St. / Valour Rd. Alley**



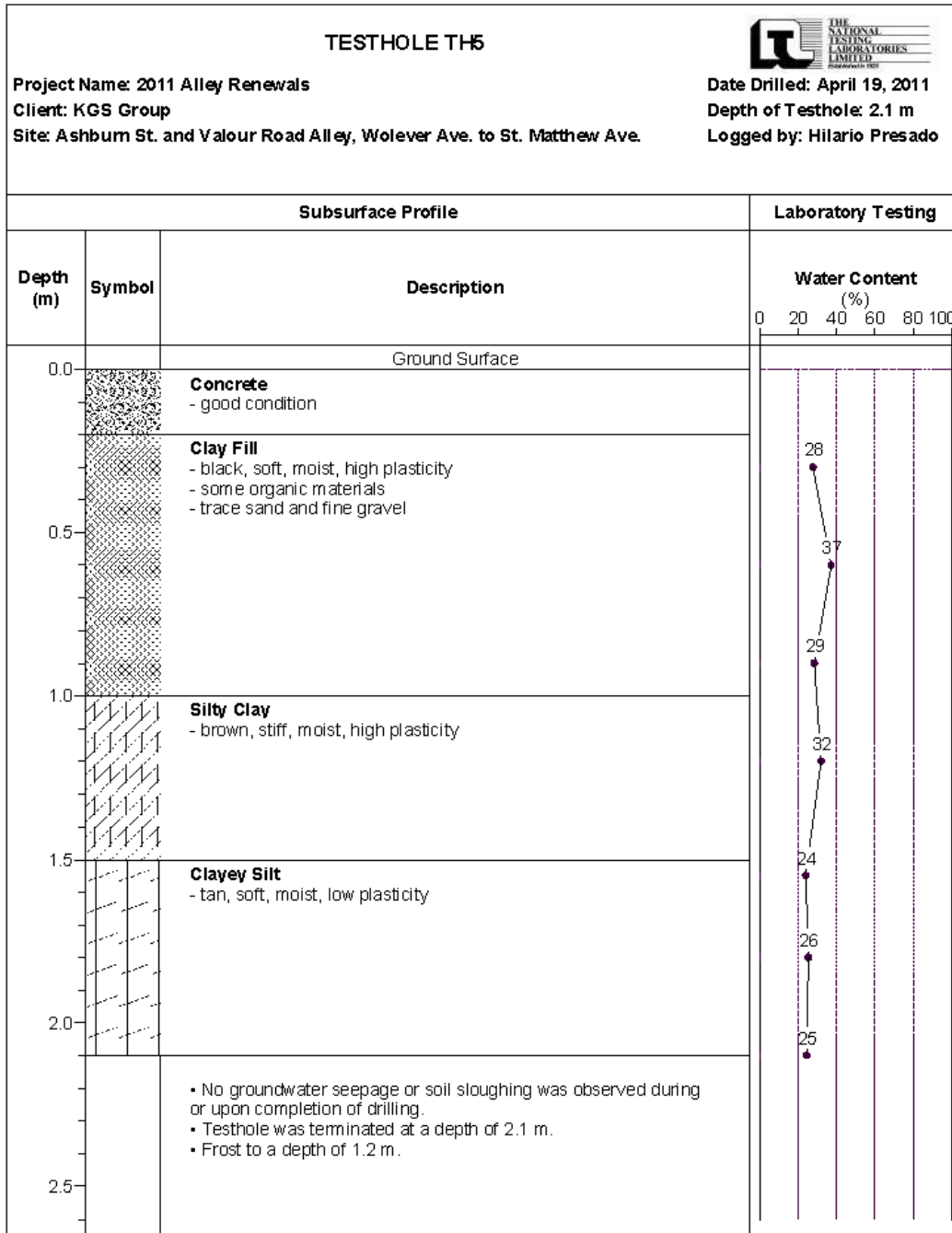
**Test Hole Log #3 for Ashburn St. / Valour Rd. Alley**



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

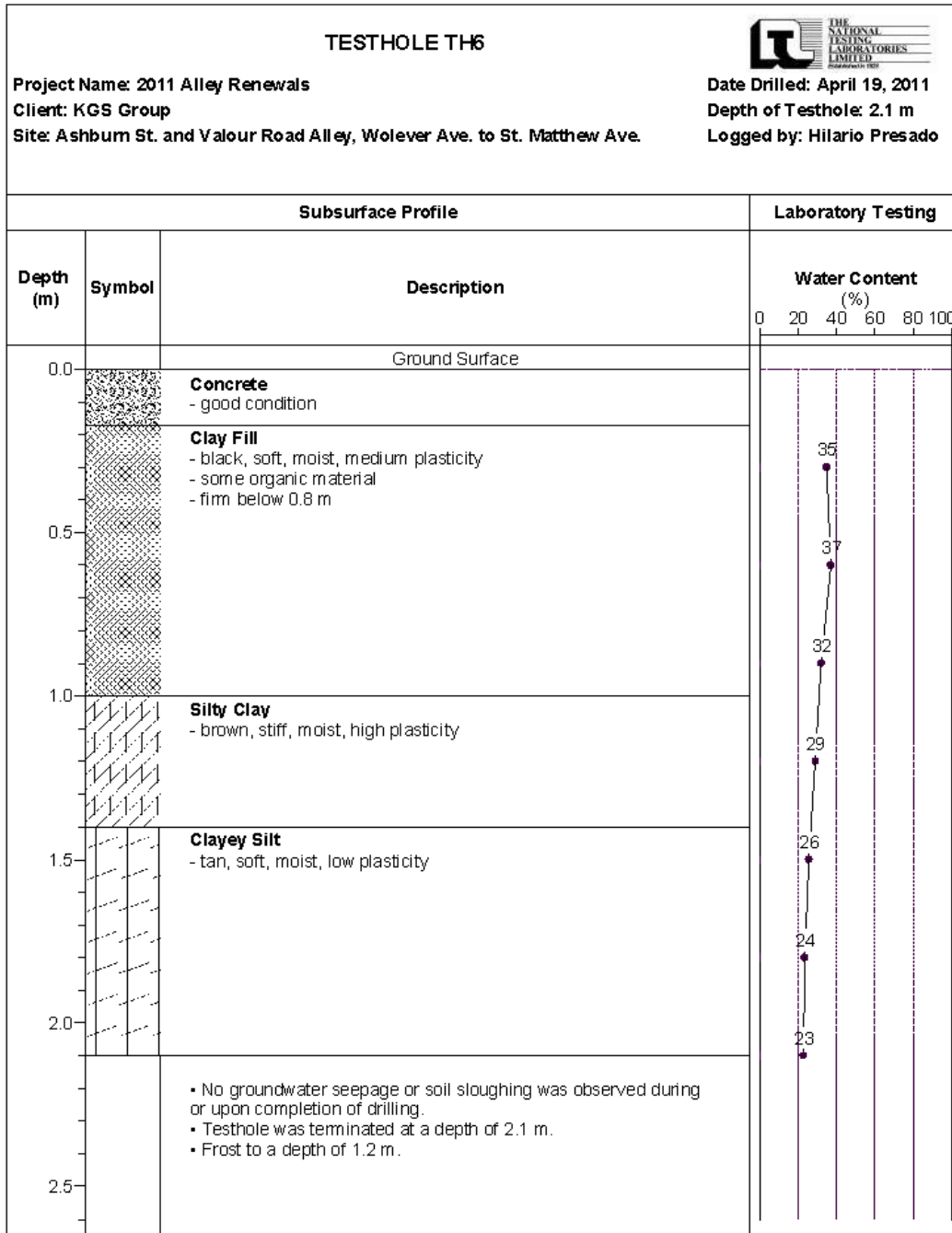


**Test Hole Log #5 for Ashburn St. / Valour Rd. Alley**

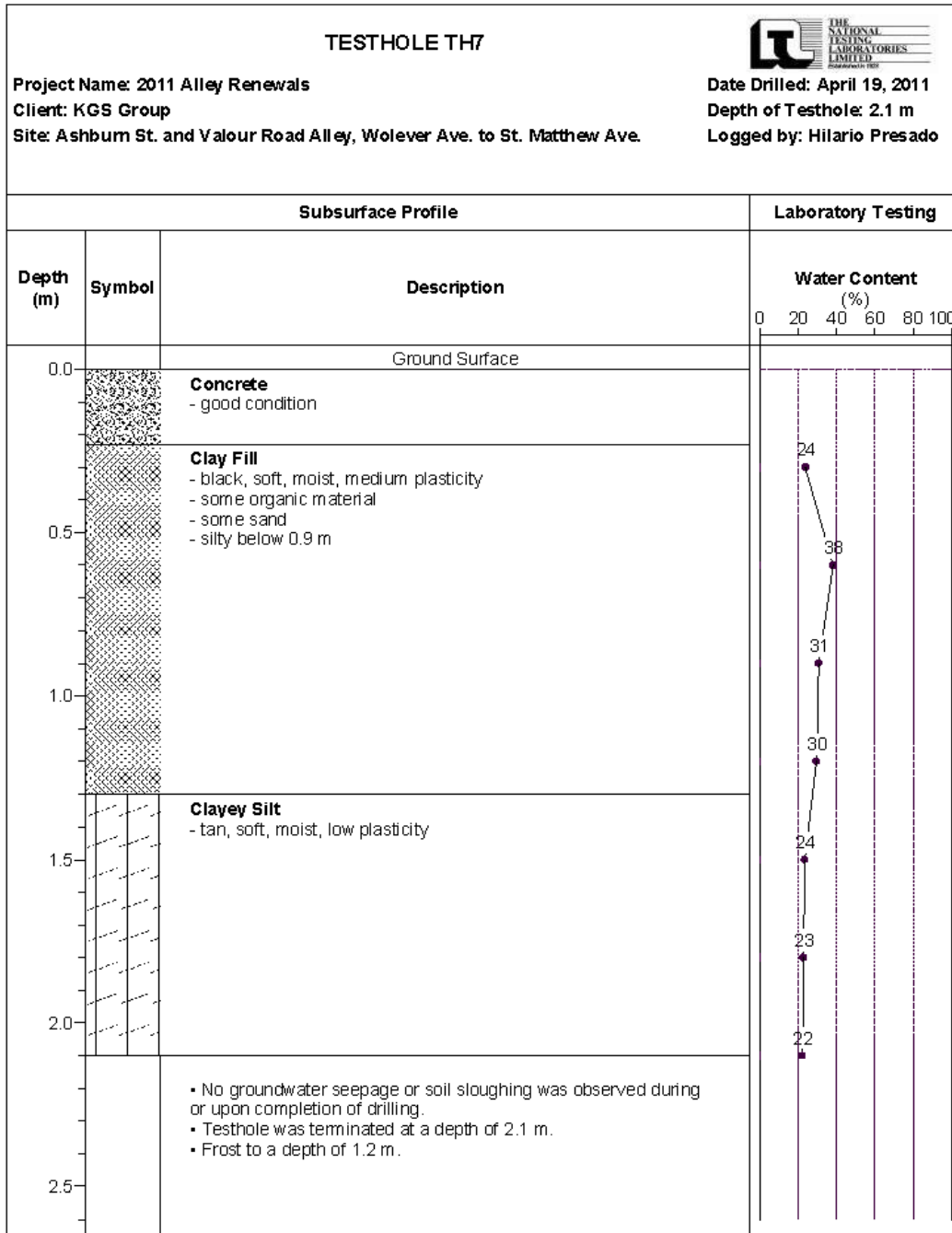




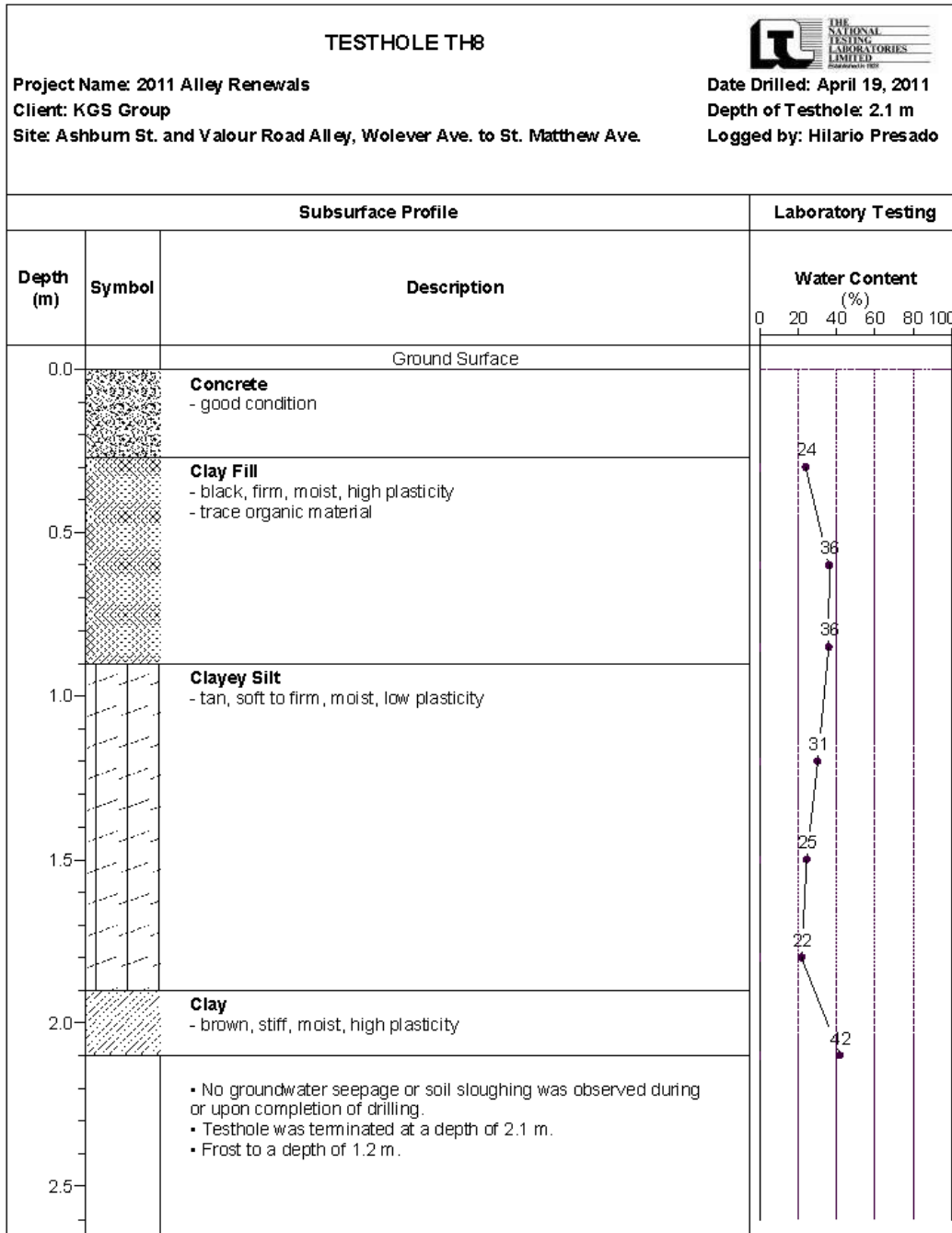
**Test Hole Log #6 for Ashburn St. / Valour Rd. Alley**



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



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



**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 TH2**



**Core sample from Testhole TH3**



**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 TH6**



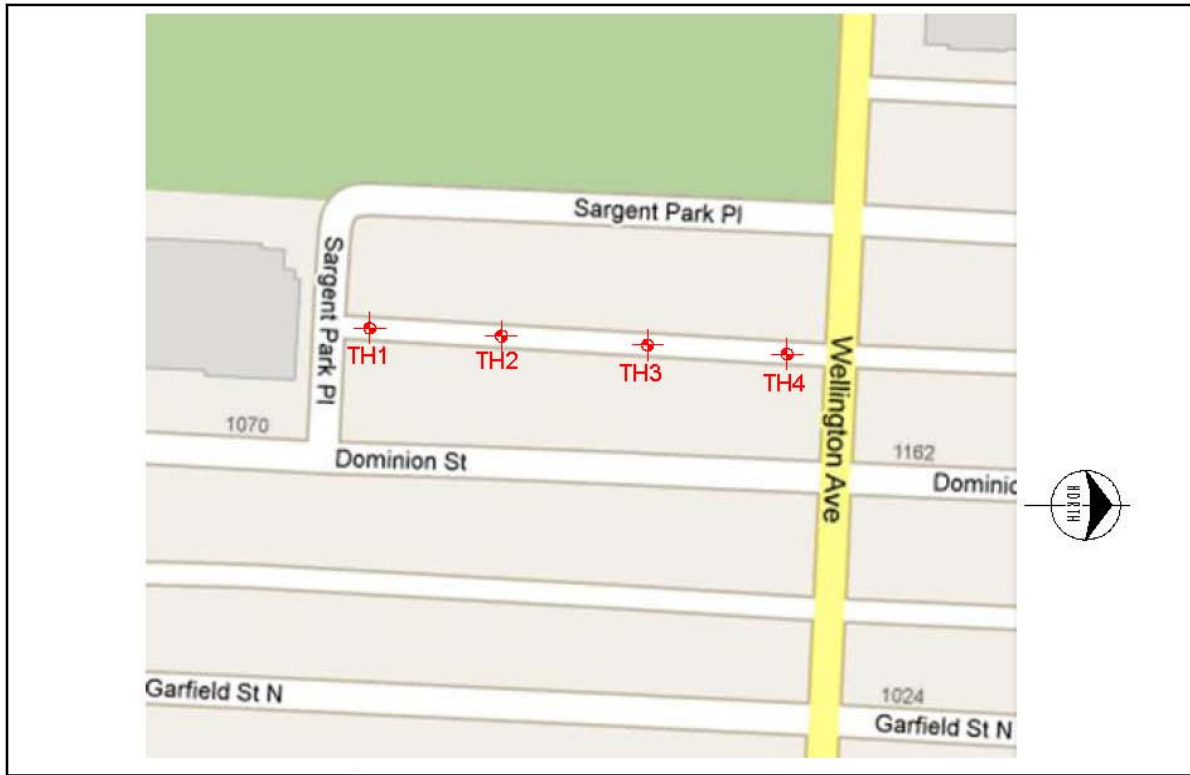
**Core sample from Testhole TH7**




**Core sample from Testhole TH8**

### Geotechnical Report for Downing St. / Dominion St. Alley

#### Test Hole Locations



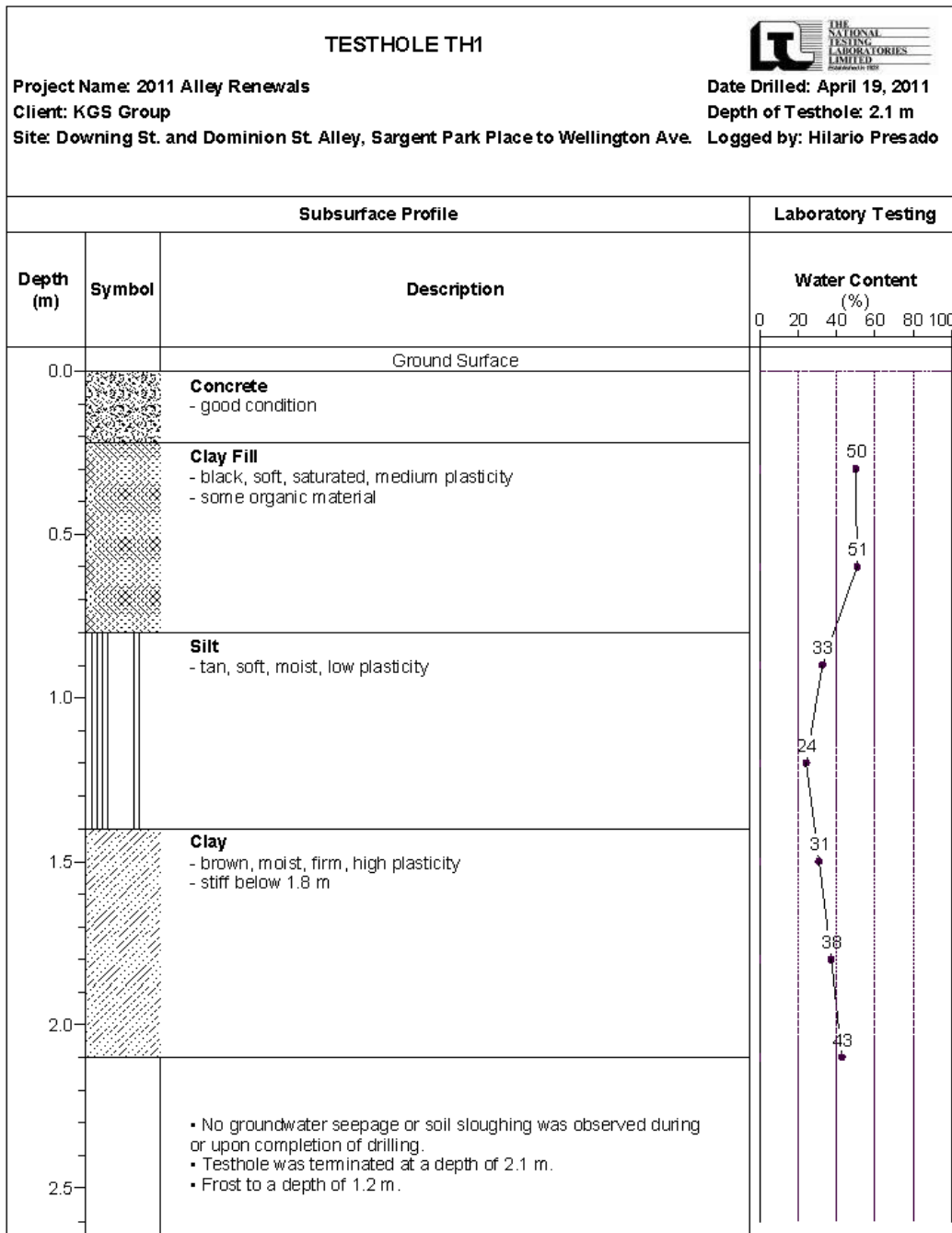
 <b>THE NATIONAL TESTING LABORATORIES LIMITED</b> <small>Established in 1923</small>	Project No. KGS-1111	Drawn by: NB	Figure: 1	<b>Testhole Location Plan</b> Downing St. and Dominion St. Alley Sargent Park Place to Wellington Ave. 2011 Alley Renewals
	Date: May 10, 2011	Reviewed by: DF	Scale: NTS	

## Summary of Core Samples

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

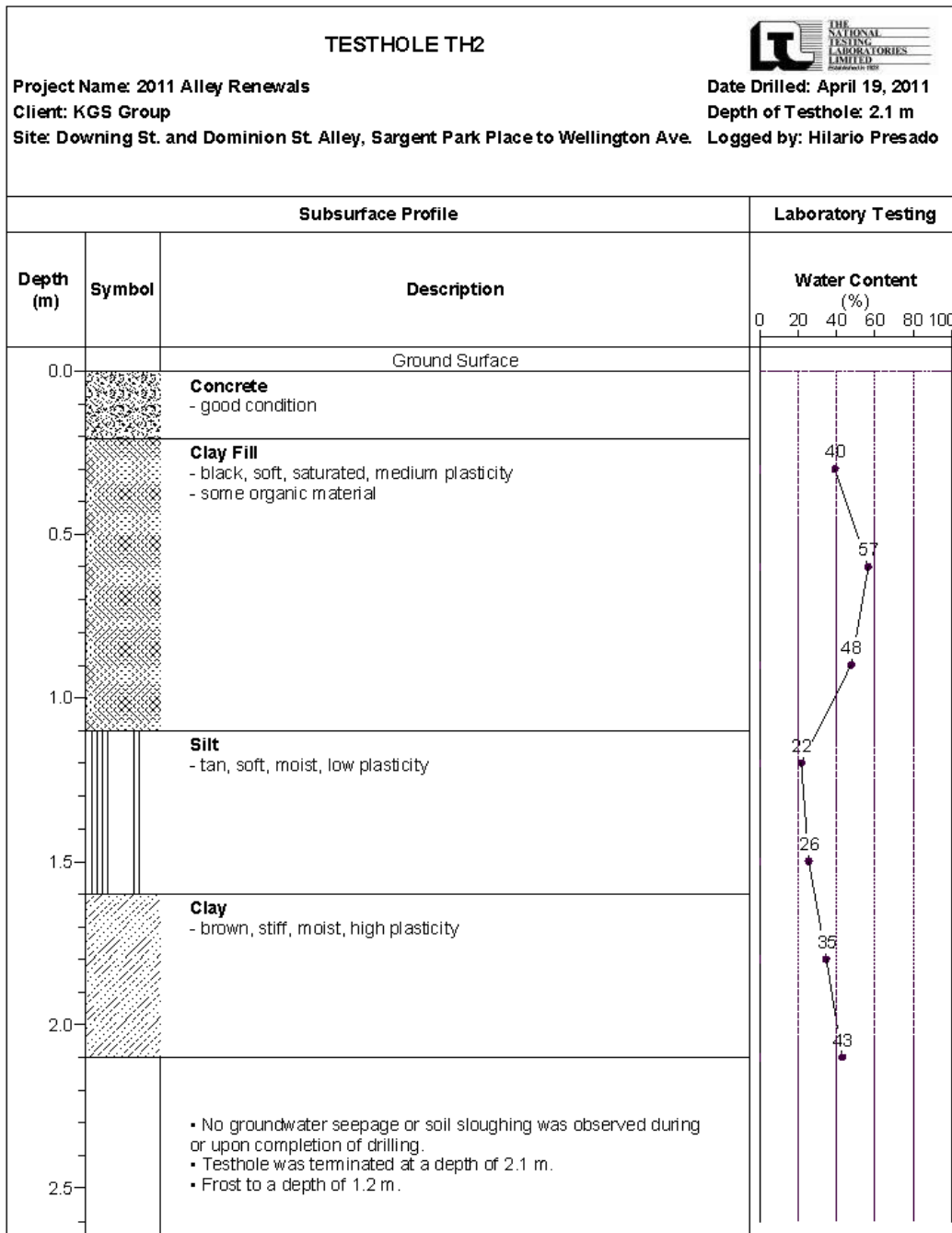
Testhole ID	Testhole Location	Pavement Surface		Pavement Structure		Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis			Atterberg Limits			
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	At property line between 1103 and 1105 Downing Street 1 m from east side of alley	Concrete	220	Clay Fill	580	-	-	-	-	-	-	-	-	-	
TH2	At property line between 1113 and 1115 Downing Street 1 m from west side of alley	Concrete	210	Clay Fill	890	-	-	-	-	-	-	-	-	-	
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	-	-	-	-	-	-	-	-	-	
TH4	2 m south of the property line between 1125 and 1127 Downing Street 2 m from east side of alley	Concrete	190	Clay Fill	510	Clay Fill Silt	0.6 0.9	38 29	0.3 0.0	9.2 6.3	54.8 70.5	35.7 23.2	43 29	15 14	28 15

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

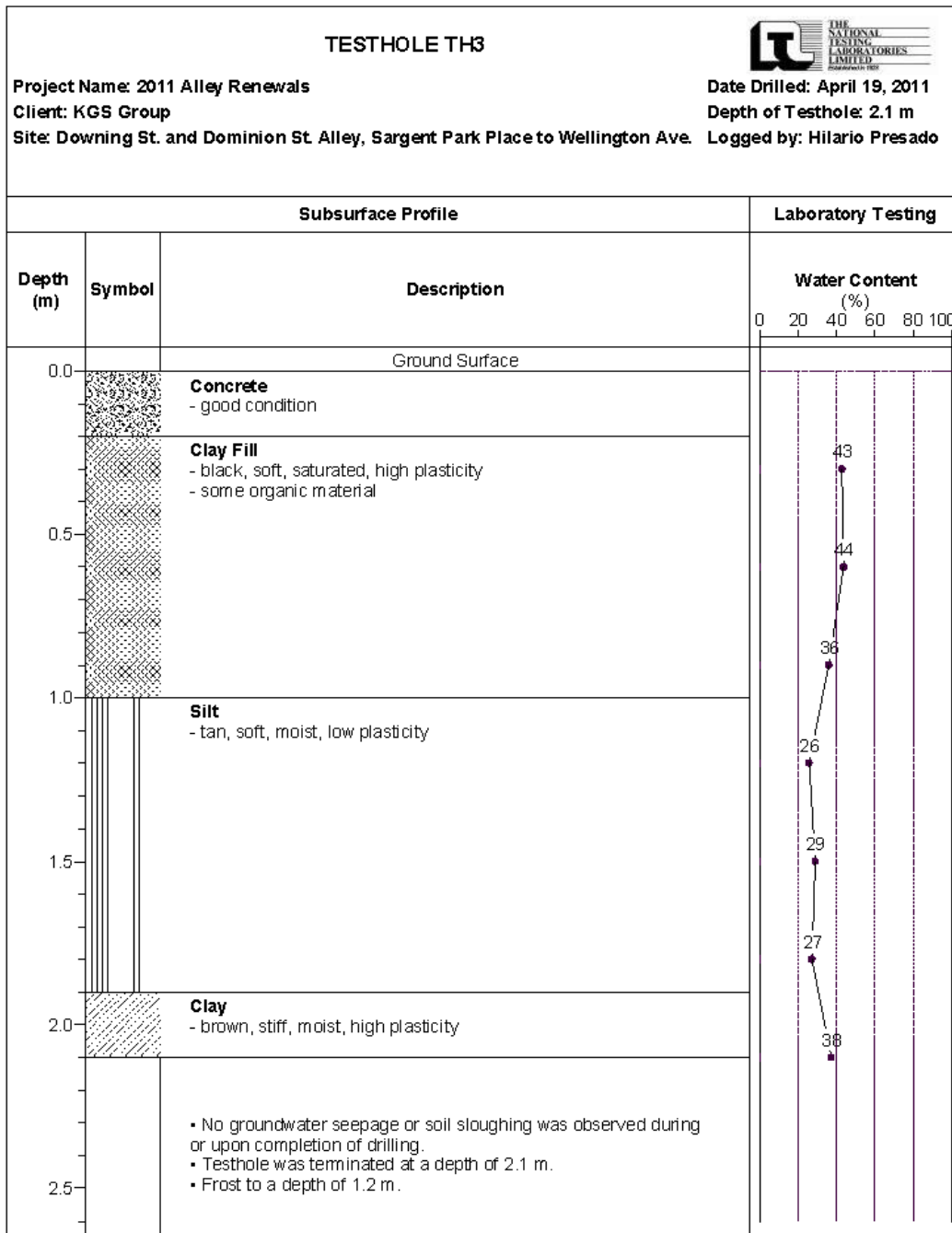




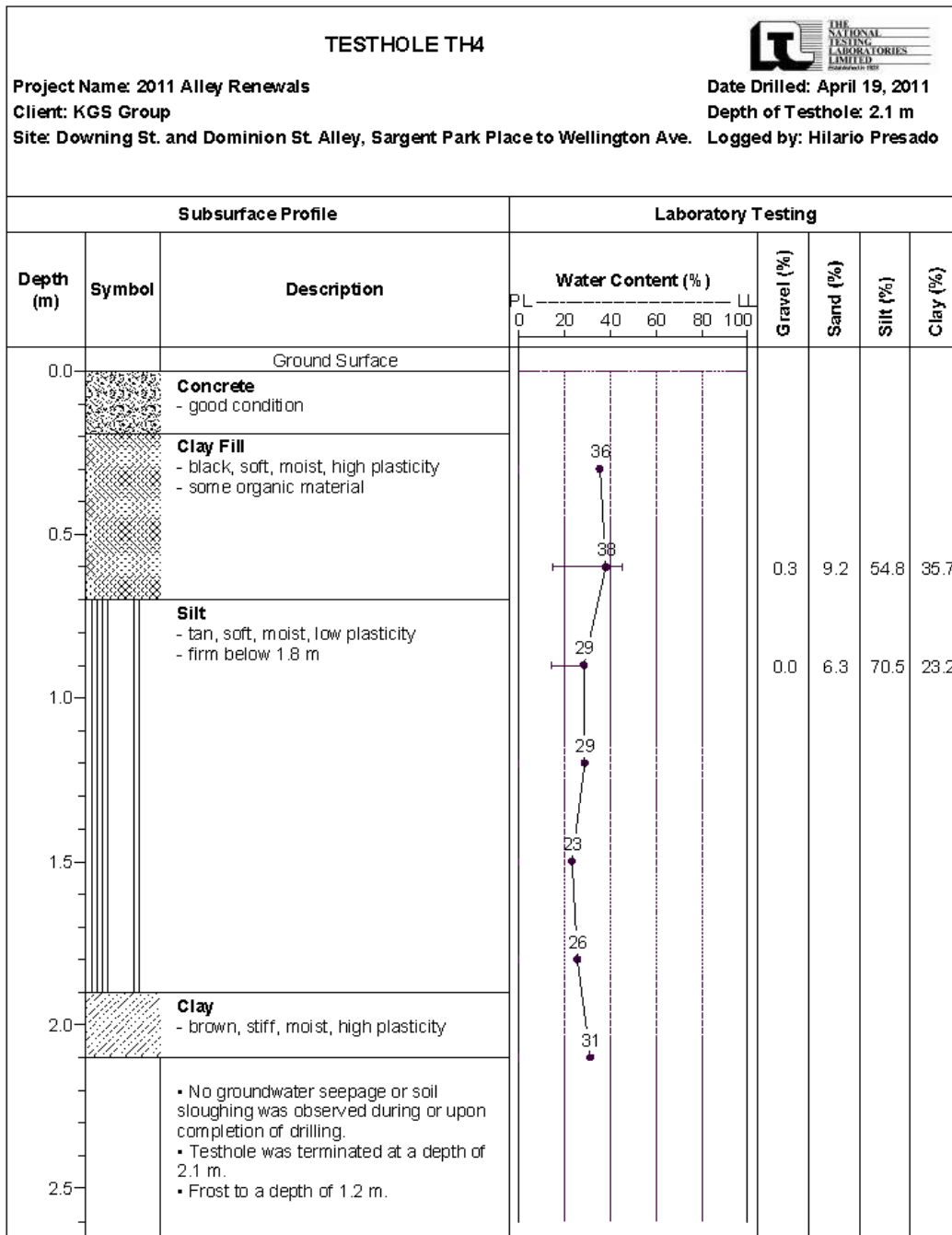
**Test Hole Log #2 for Downing St. / Dominion St. Alley**



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



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



## 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



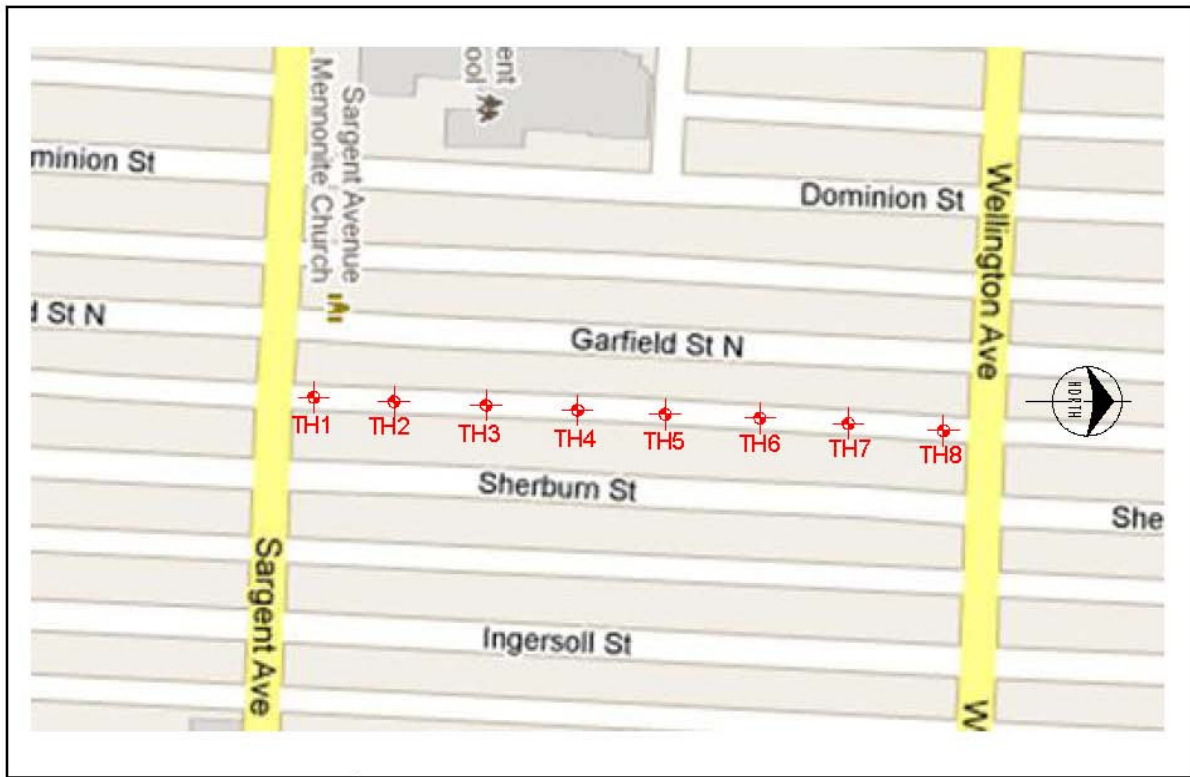
Core sample from Testhole TH3




Core sample from Testhole TH4

### Geotechnical Report for Garfield St. / Sherburn St. Alley

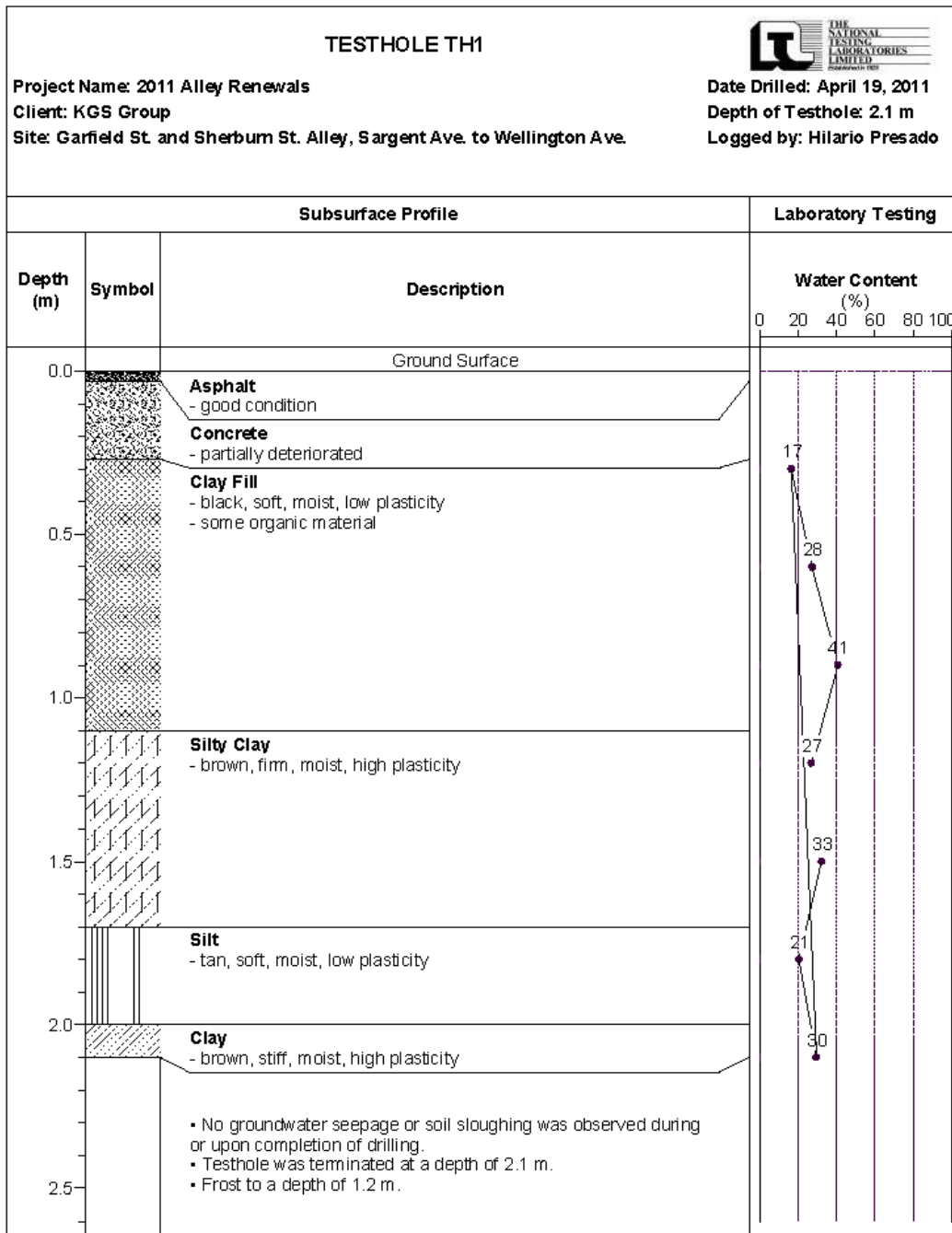
#### Test Hole Locations



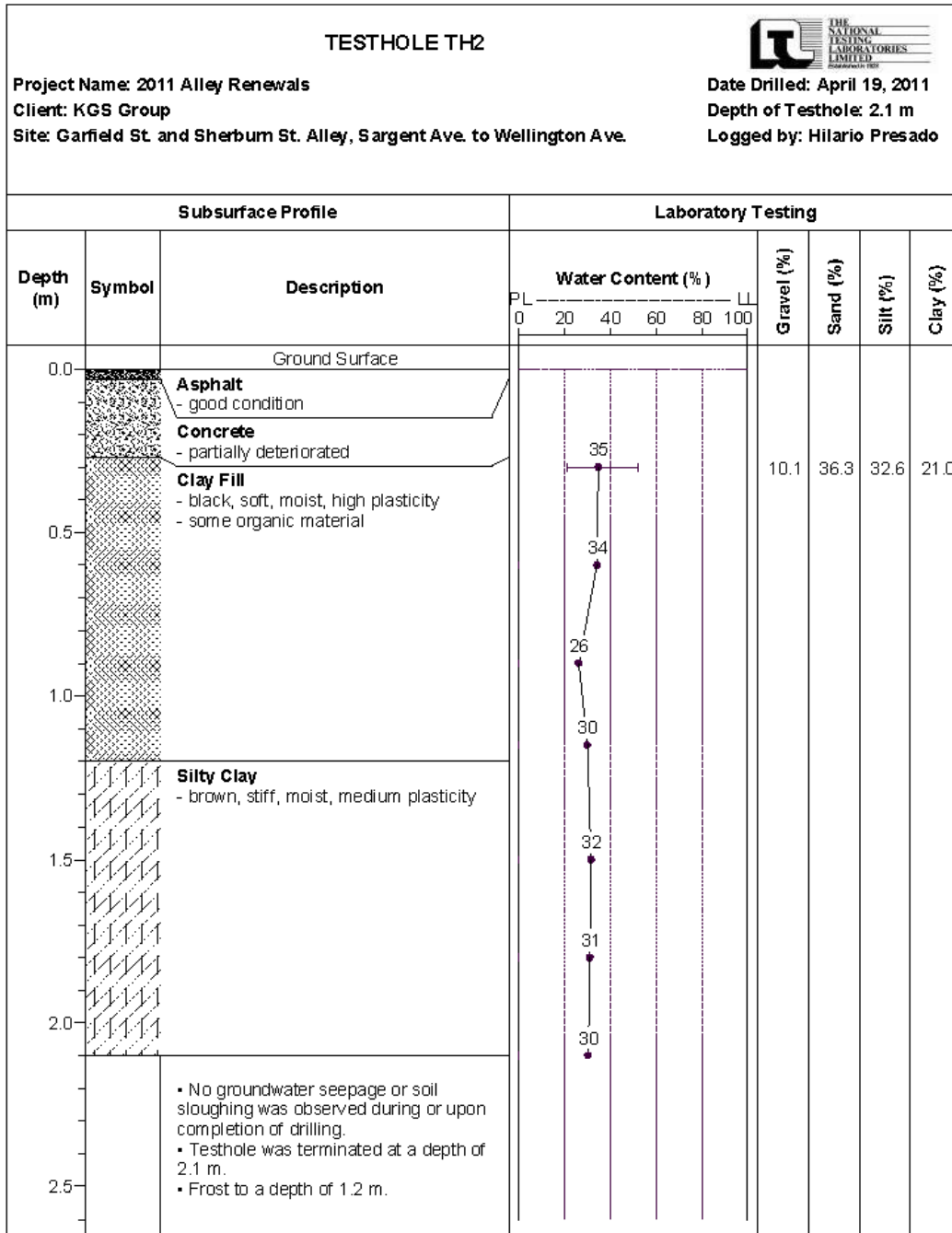
 <b>THE NATIONAL TESTING LABORATORIES LIMITED</b> <small>Established in 1923</small>	Project No. KGS-1111	Drawn by: NB	Figure: 1	<b>Testhole Location Plan</b> Garfield St. and Sherburn St. Alley Sargent Ave. to Wellington Ave. 2011 Alley Renewals
	Date: May 10, 2011	Reviewed by: DF	Scale: NTS	



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

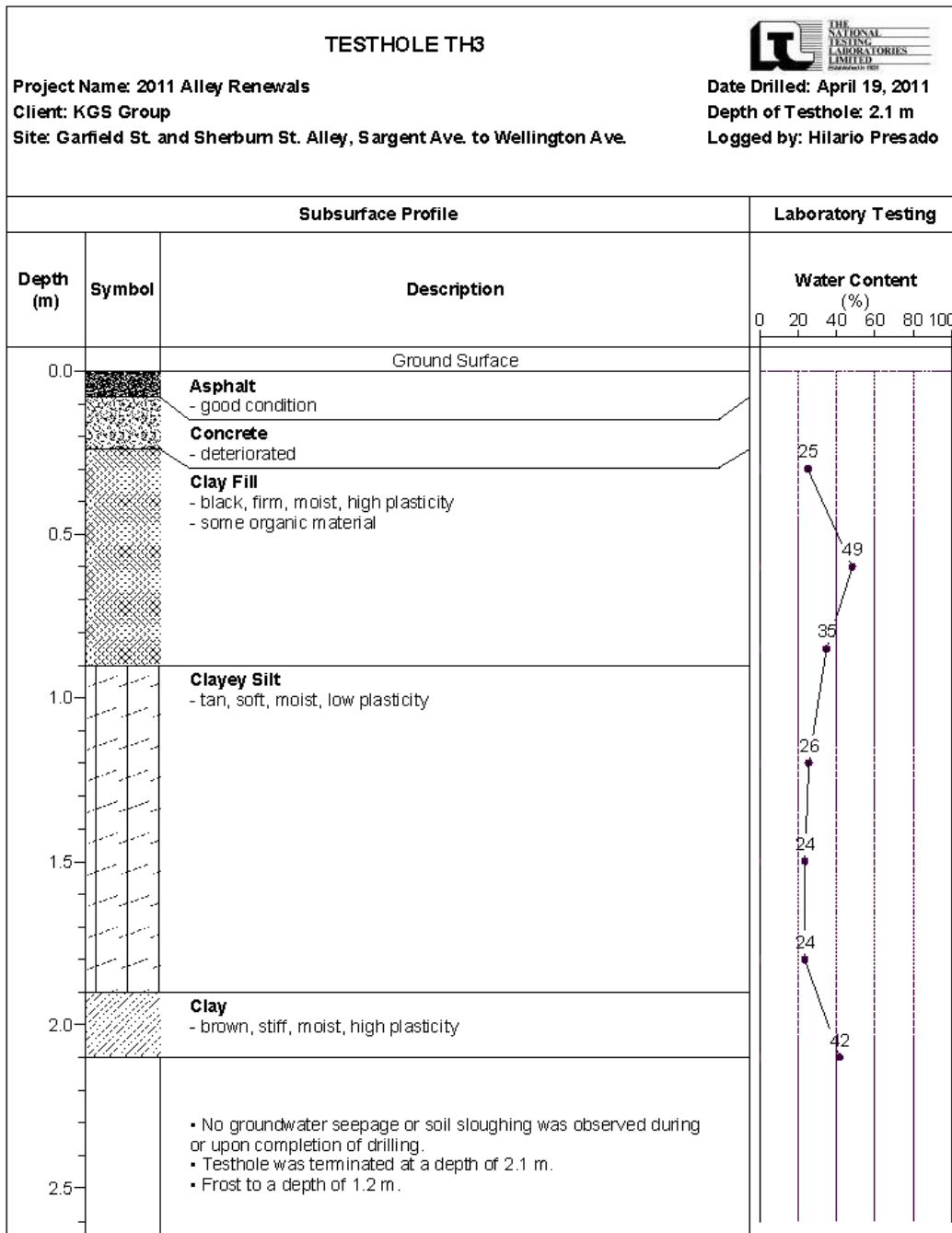


**Test Hole Log #2 for Garfield St. / Sherburn St. Alley**

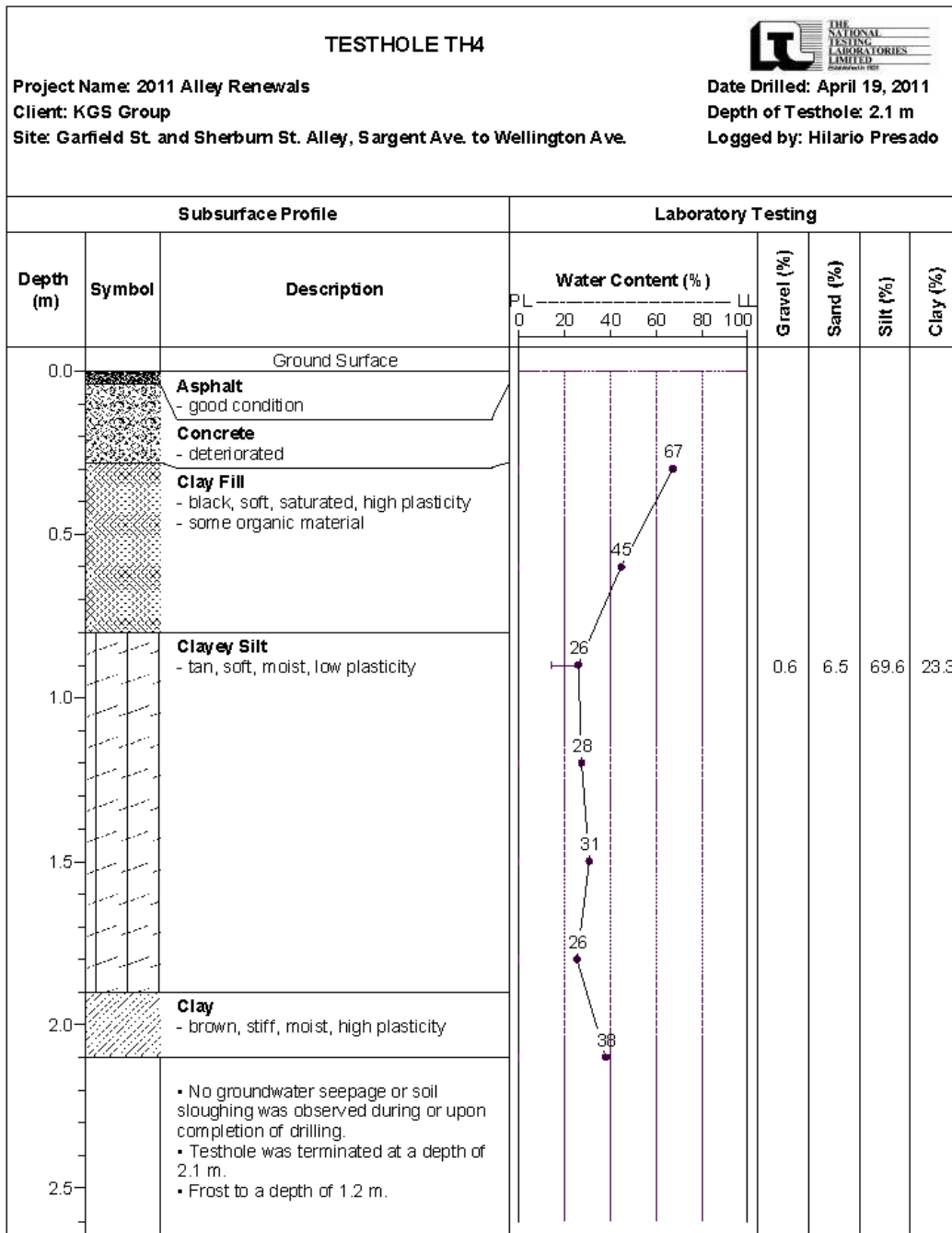




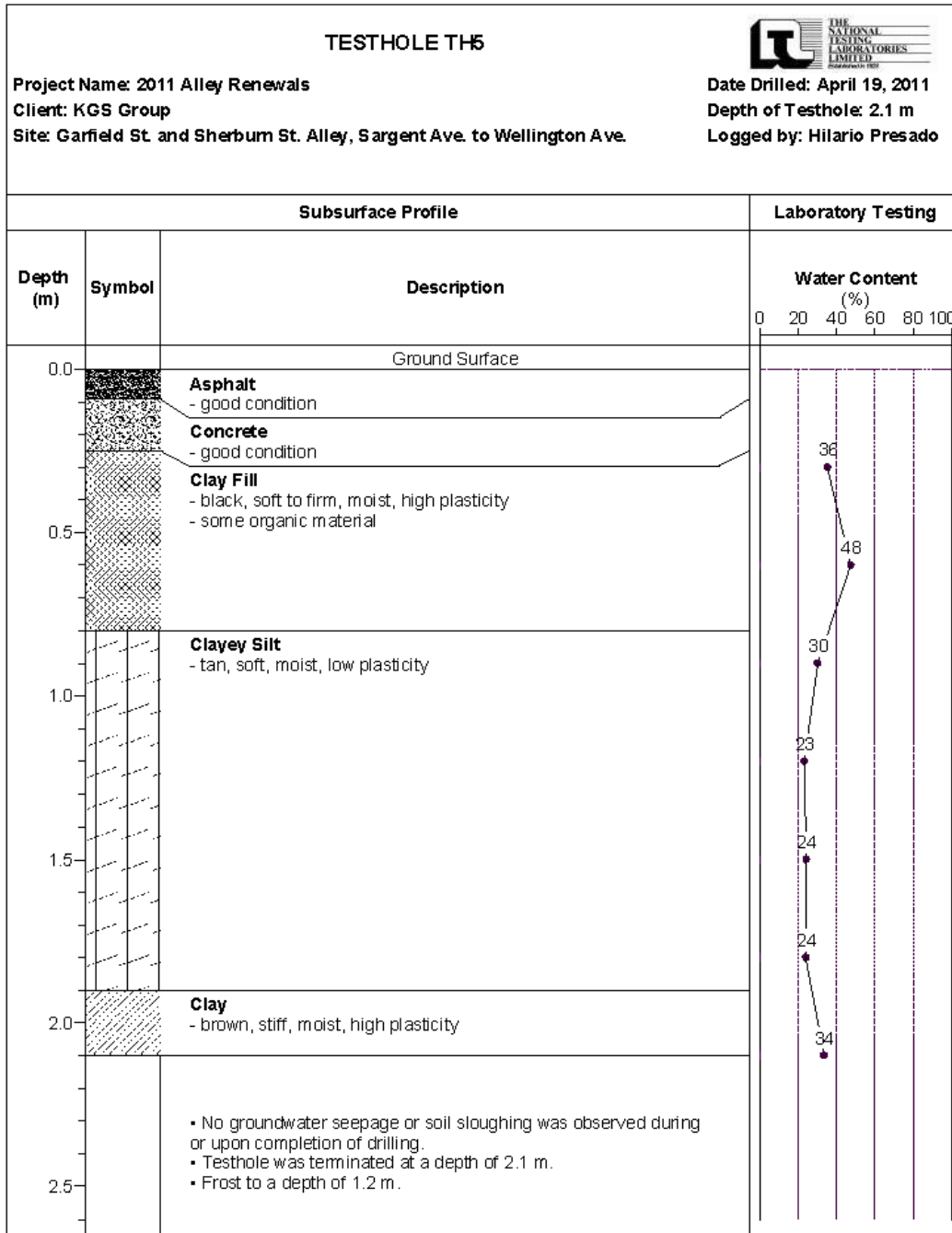
**Test Hole Log #3 for Garfield St. / Sherburn St. Alley**



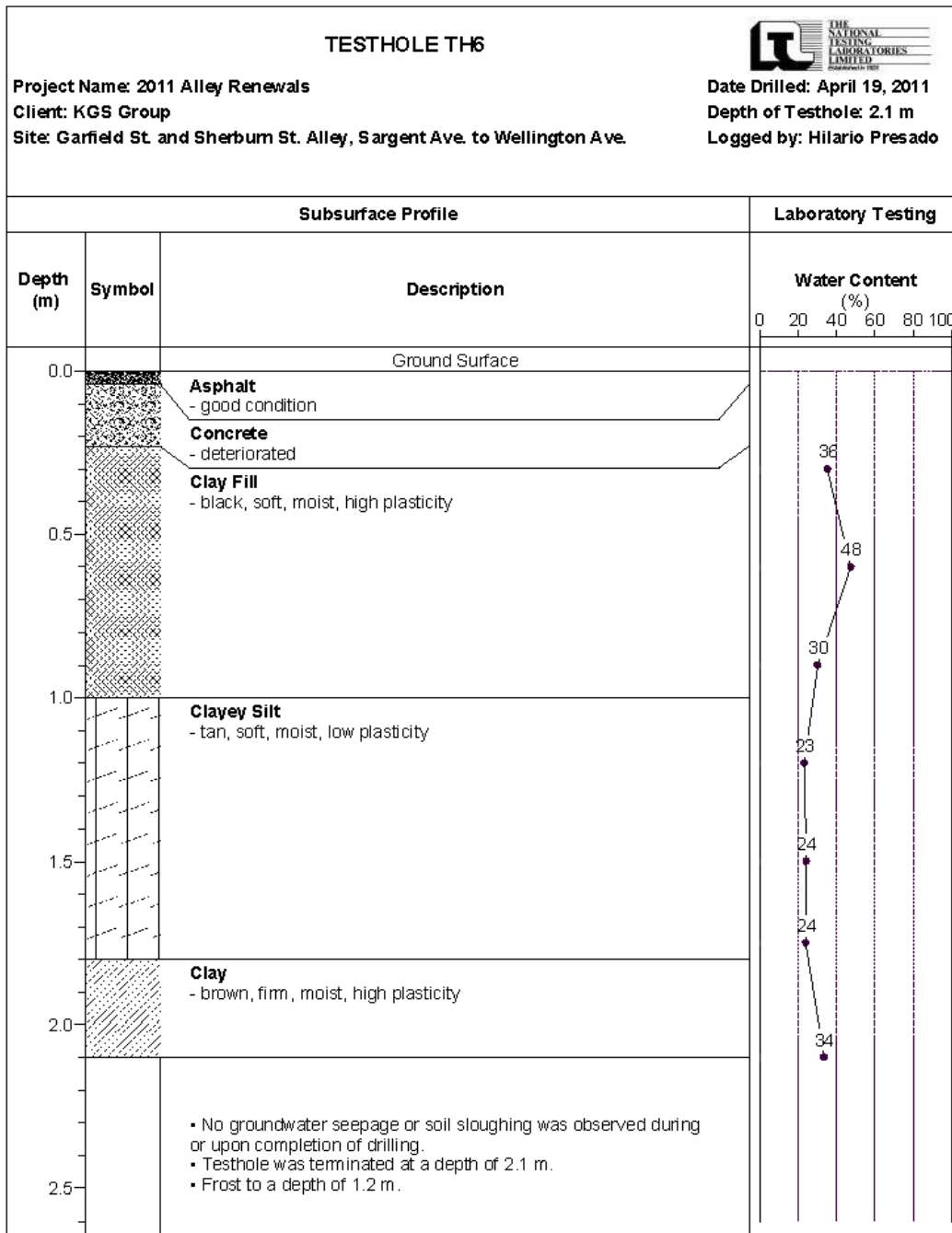
**Test Hole Log #4 for Garfield St. / Sherburn St. Alley**



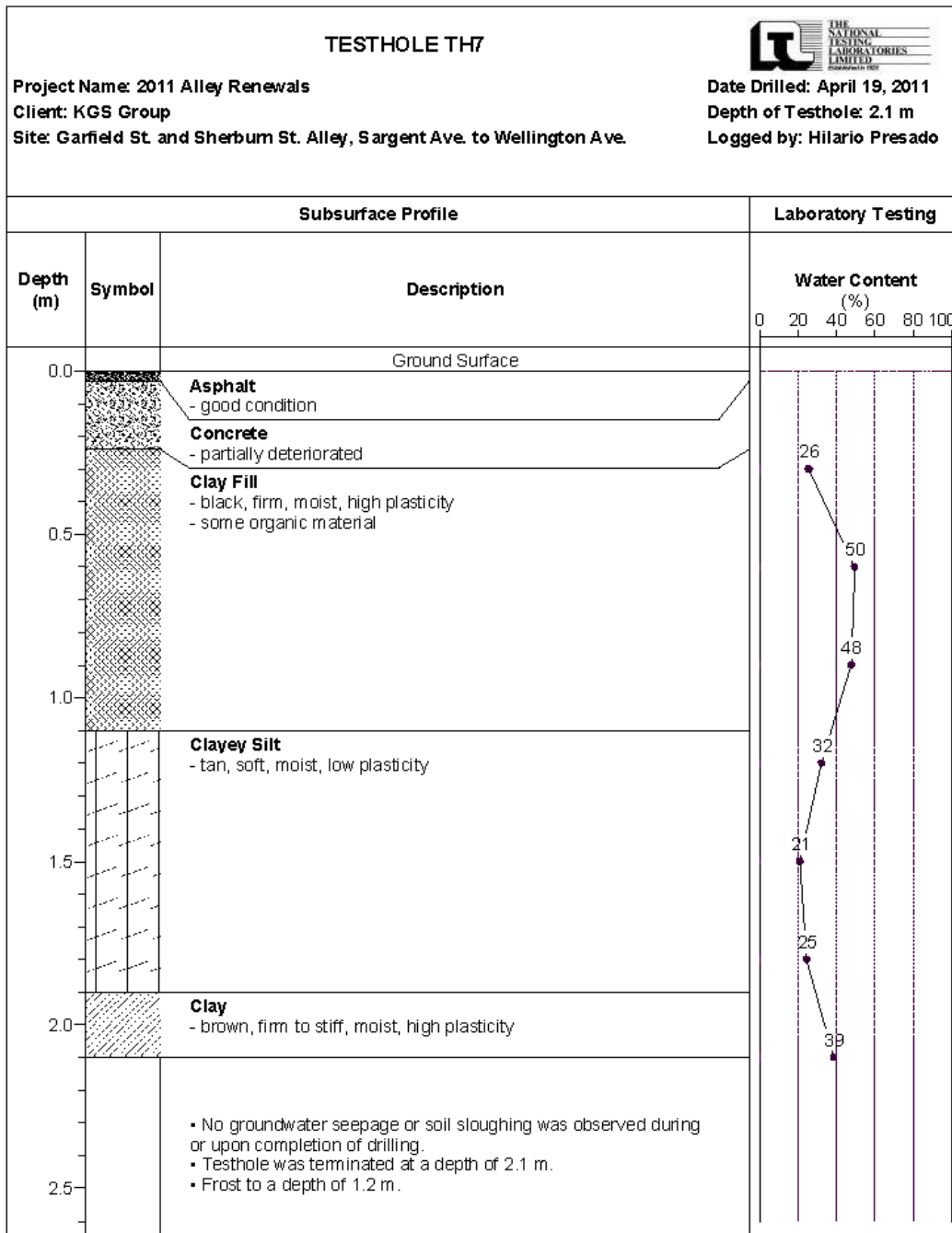
**Test Hole Log #5 for Garfield St. / Sherburn St. Alley**



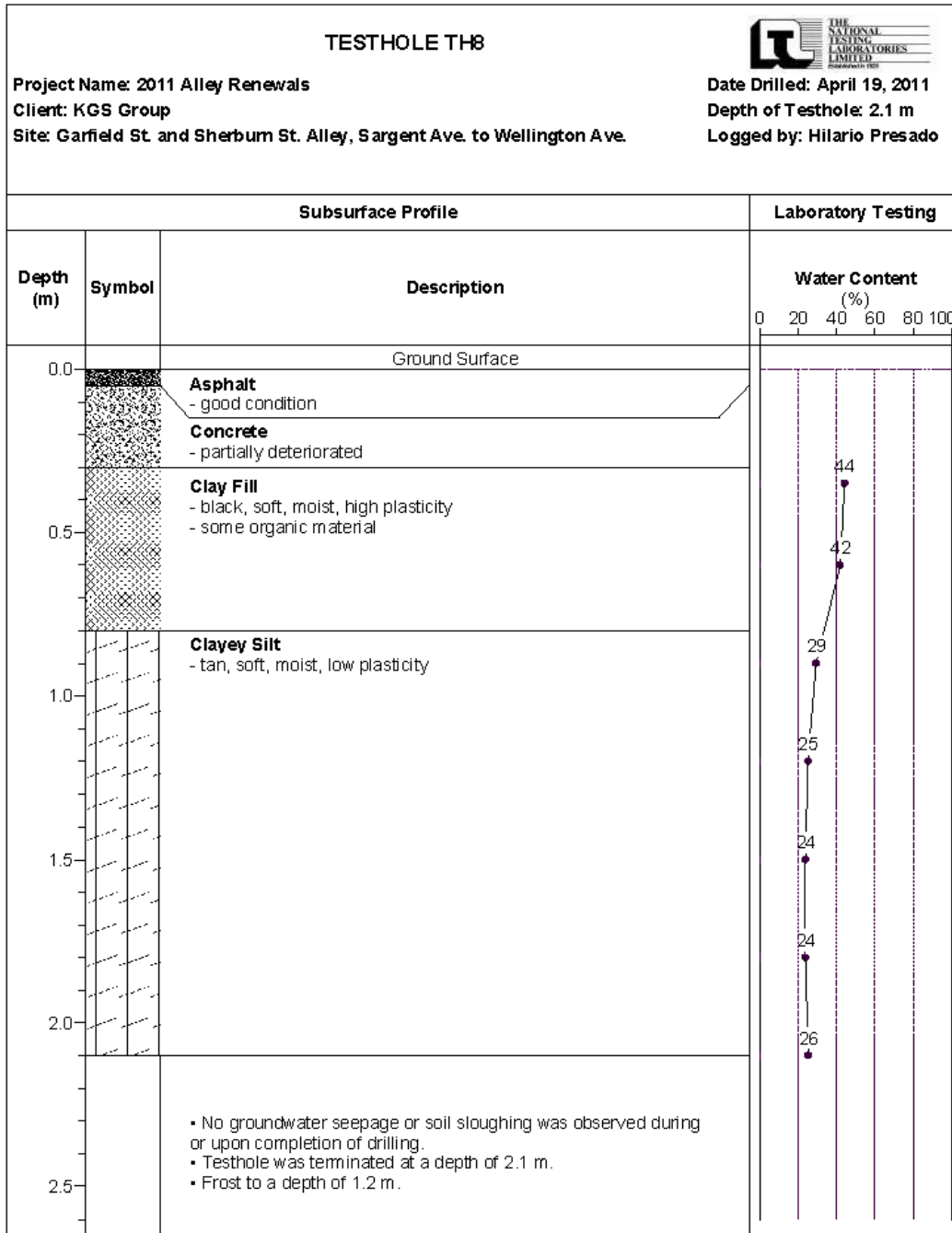
**Test Hole Log #6 for Garfield St. / Sherburn St. Alley**



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



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



**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 TH6**



**Core sample from Testhole TH7**




**Core sample from Testhole TH8**



## Geotechnical Report for Charles St. / Main St. Alley

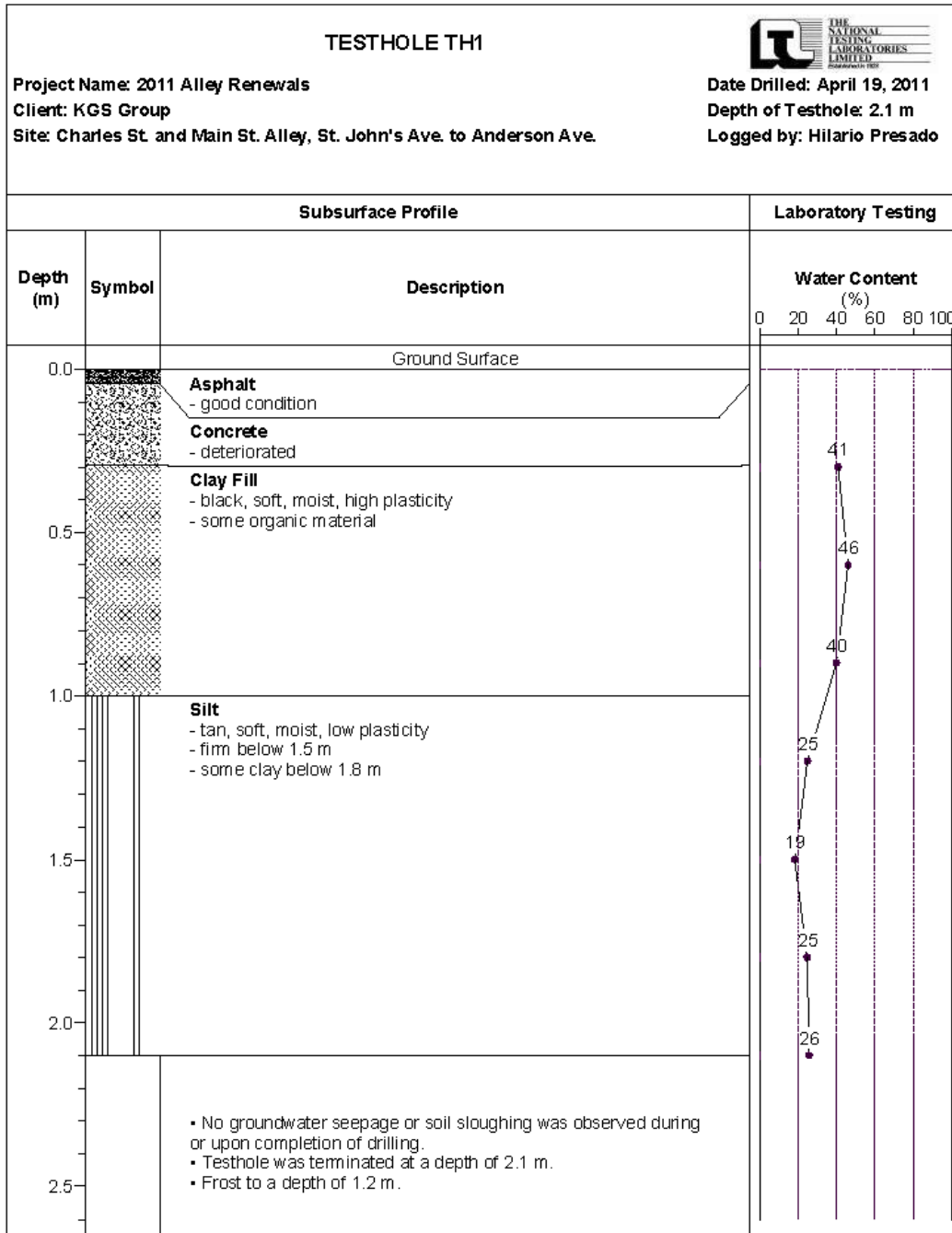
### Test Hole Locations



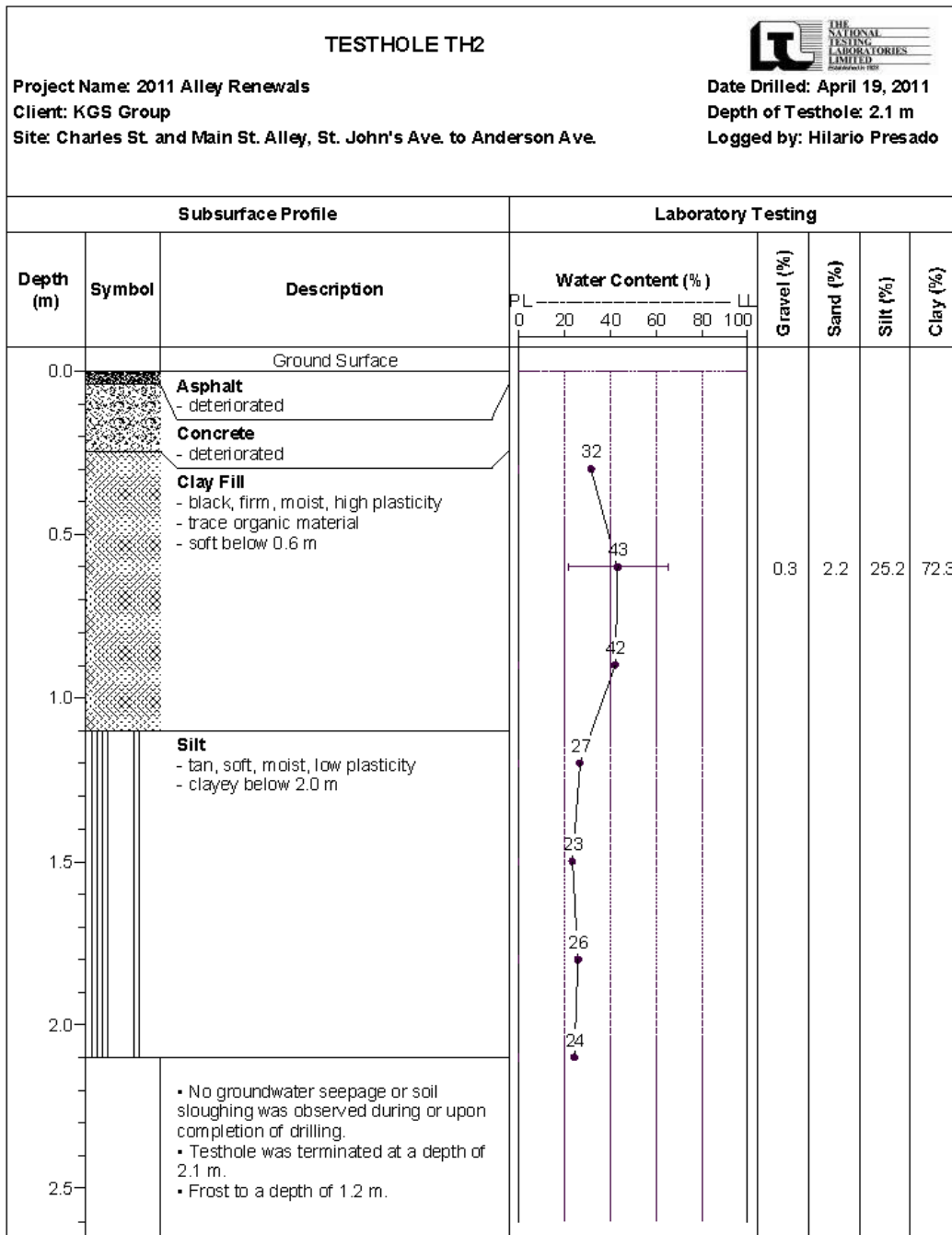
 <p><b>THE NATIONAL TESTING LABORATORIES LIMITED</b>  <small>Established in 1923</small></p>	Project No. KGS-1111	Drawn by: NB	Figure: 1	Testhole Location Plan Charles St. and Main St. Alley St. John's Ave. to Anderson Ave. 2011 Alley Renewals
	Date: May 6, 2011	Reviewed by: DF	Scale: NTS	



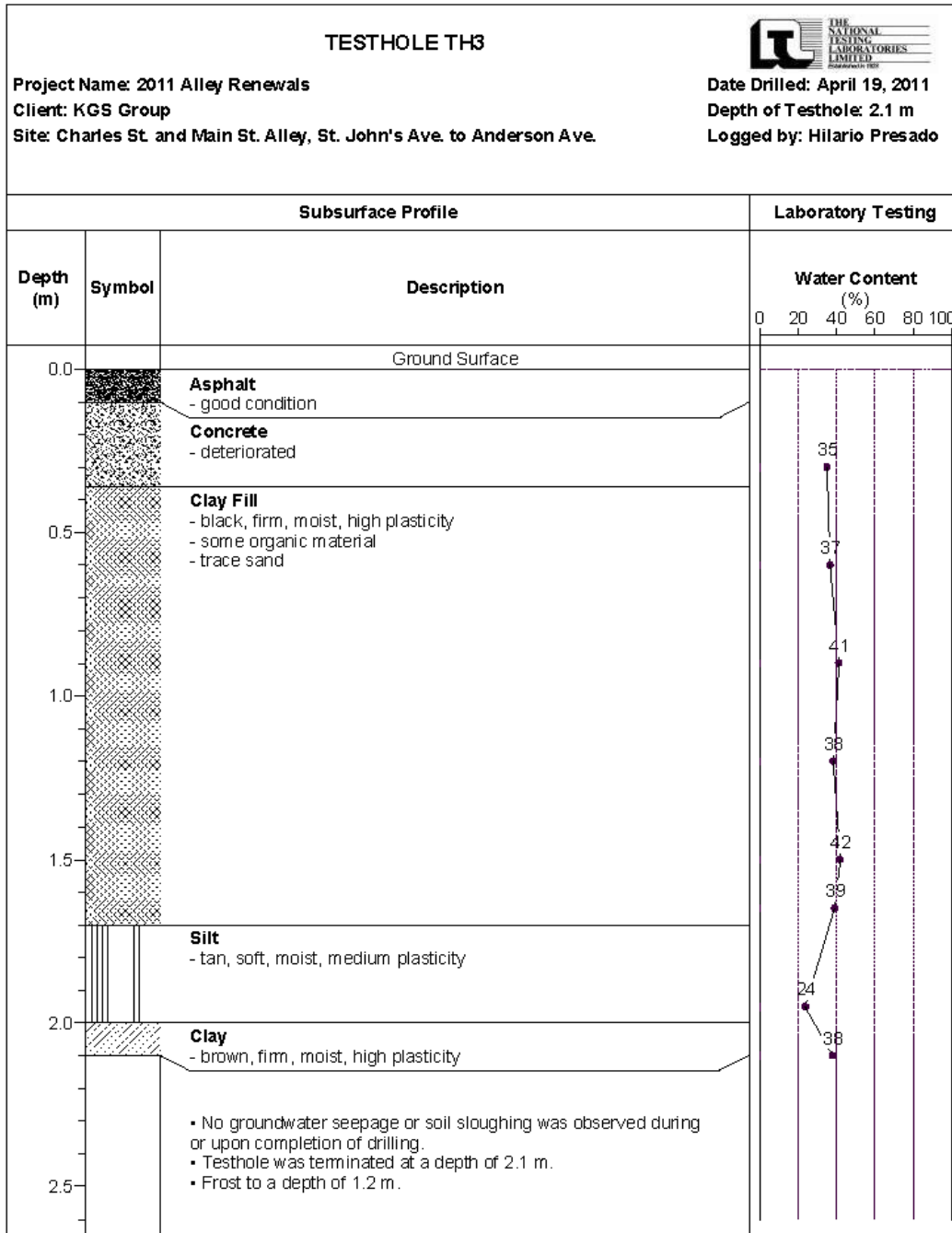
**Test Hole Log #1 for Charles St. / Main St. Alley**



**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



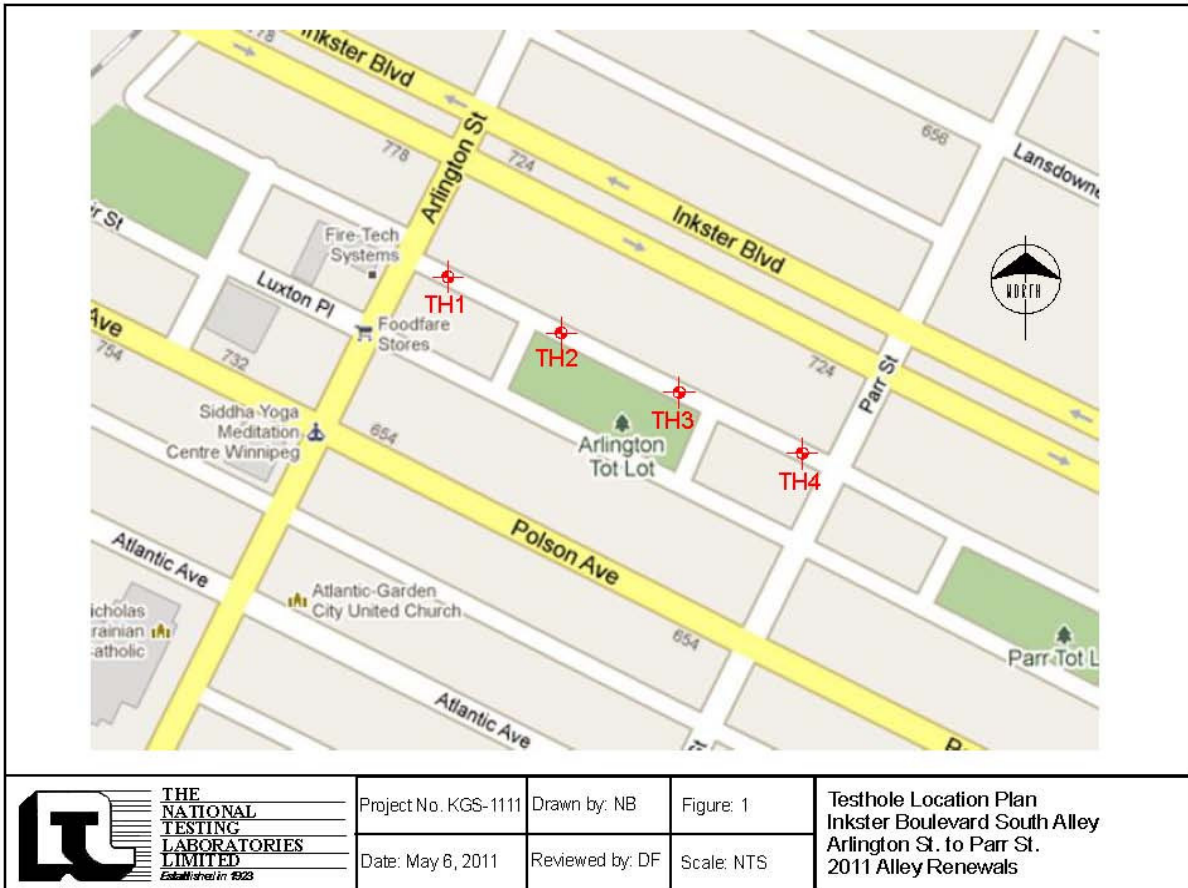
Core sample from Testhole TH2



Core sample from Testhole TH3

## Geotechnical Report for Inkster Blvd. South Alley

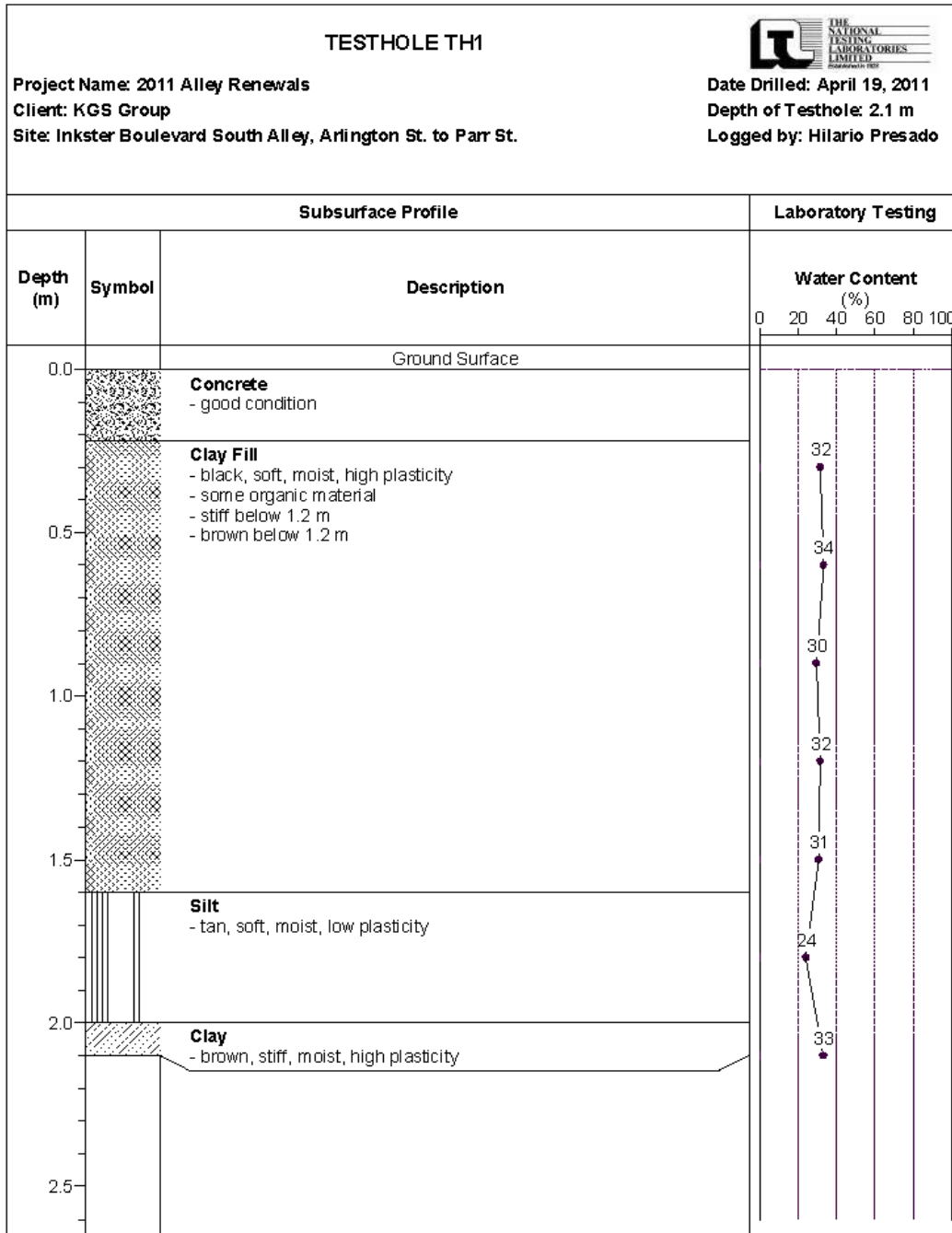
### Test Hole Locations



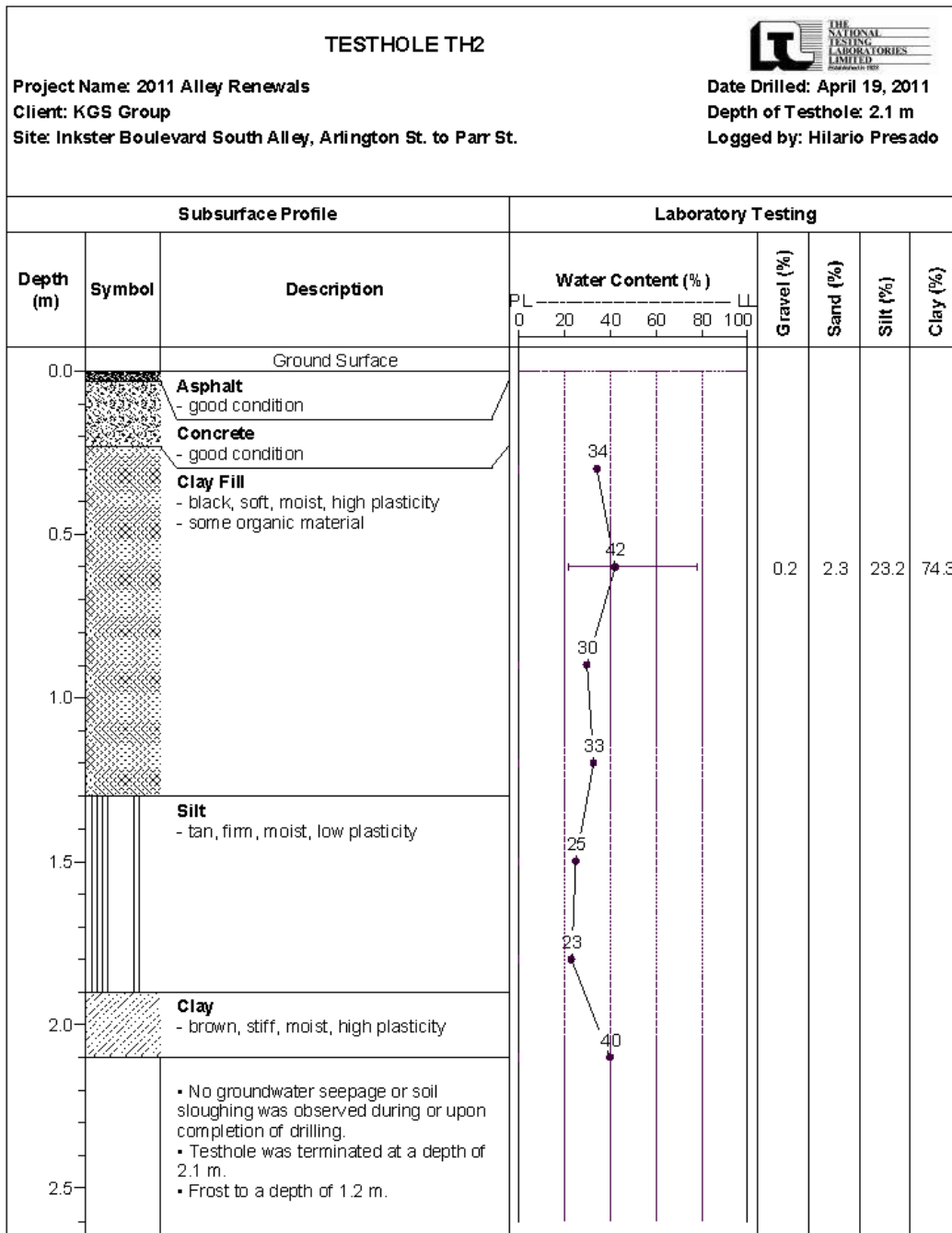




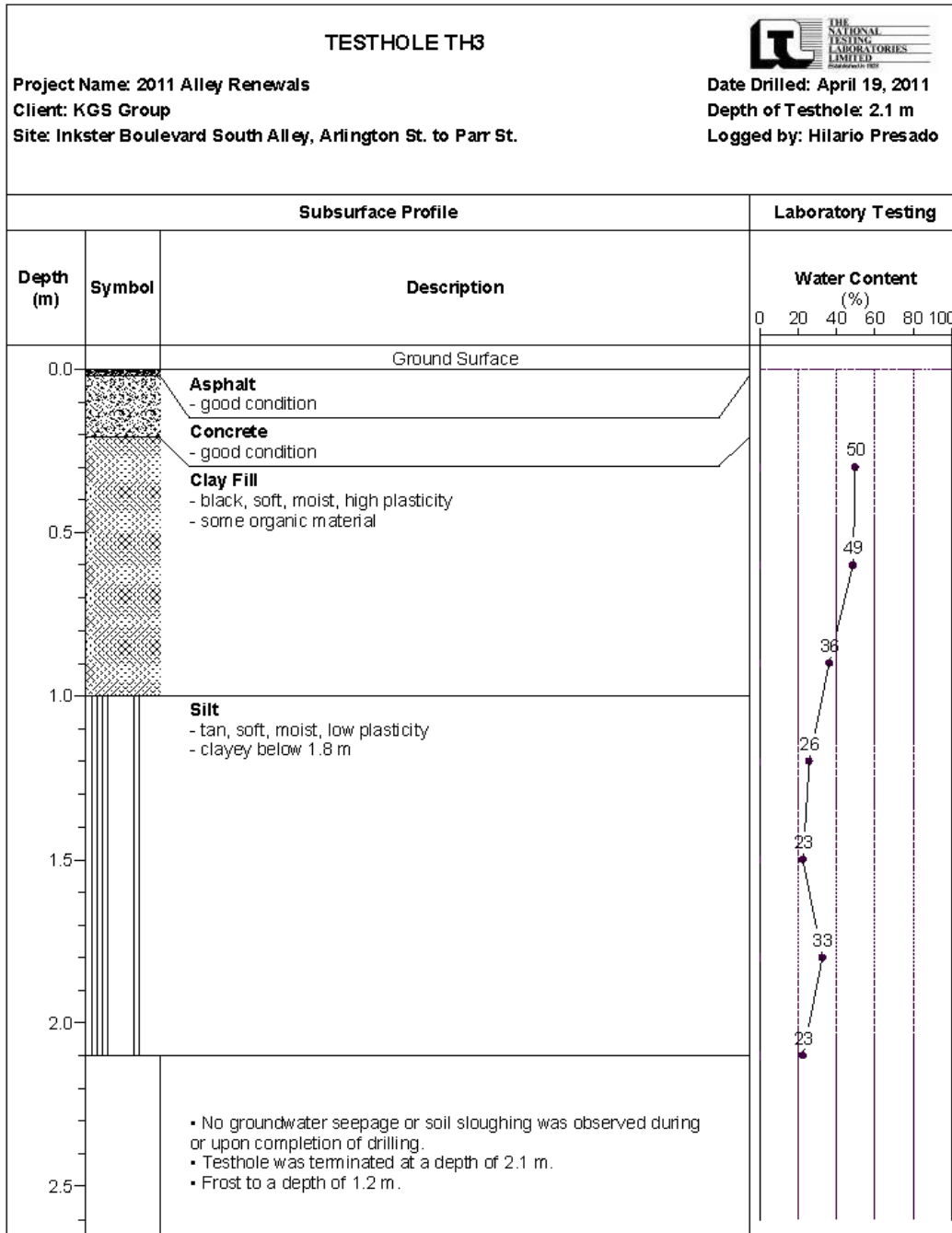
**Test Hole Log #1 for Inkster Blvd. South Alley**



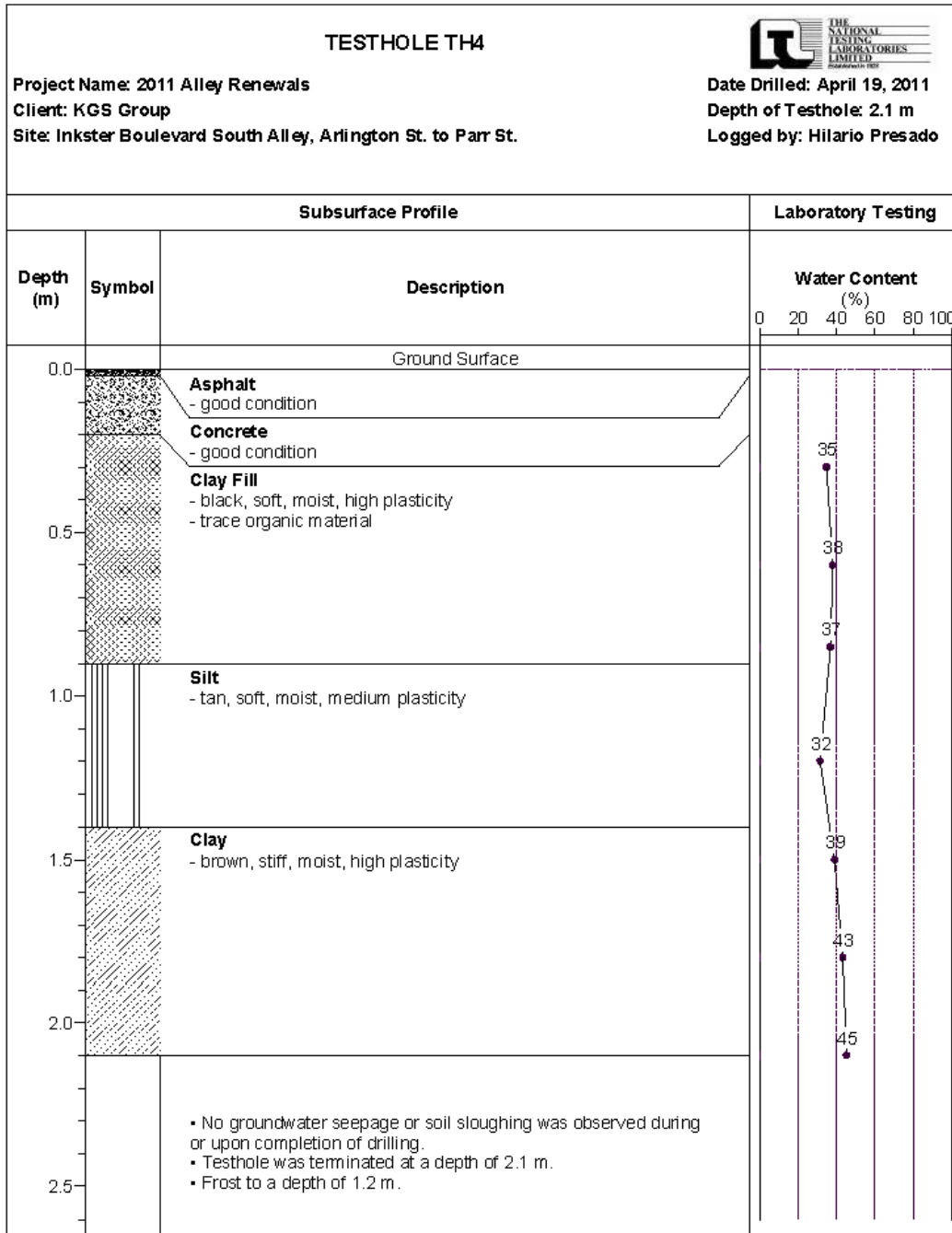
**Test Hole Log #2 for Inkster Blvd. South Alley**



**Test Hole Log #3 for Inkster Blvd. South Alley**



**Test Hole Log #4 for Inkster Blvd. South Alley**



### Pavement Core Photos



#### INKSTER BOULEVARD SOUTH ALLEY ARLINGTON STREET TO PARR STREET



Core sample from Testhole TH1



Core sample from Testhole TH2



Core sample from Testhole TH3



Core sample from Testhole TH4