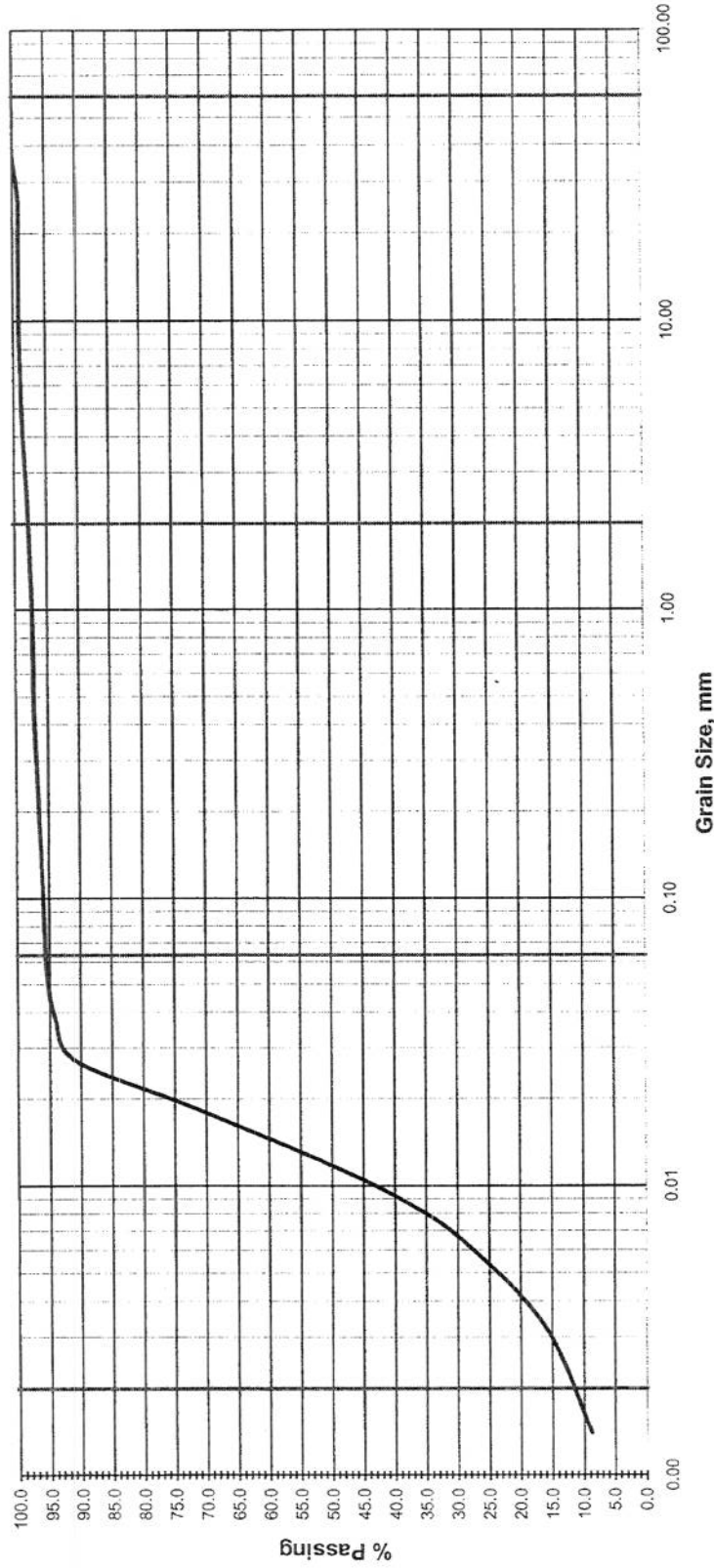




Method of Test for Particle Size Analysis of Soil

MTO Test Method LS - 702, Rev. No. 19

Grain Size Distribution Curve



CLAY	SILT			SAND			GRAVEL		
	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse
Modified M.I.T. Classification									

Trow Project No.:	OTGEO0019838B	Project Name :	Geotechnical Investigation, Liquid and Solid Waste Management						
Client :	Government of Nunavut	Project Location :	Hamlet, Igloodik, Nunavut						
Date Sampled :	November 3, 2009	Borehole No.:	BH 2	Sample No.:	SS 4	Depth (m) :	1.6 to 2.0		
Sample Description :	Silt, some Clay trace			Sand & Gravel			Figure :	23	

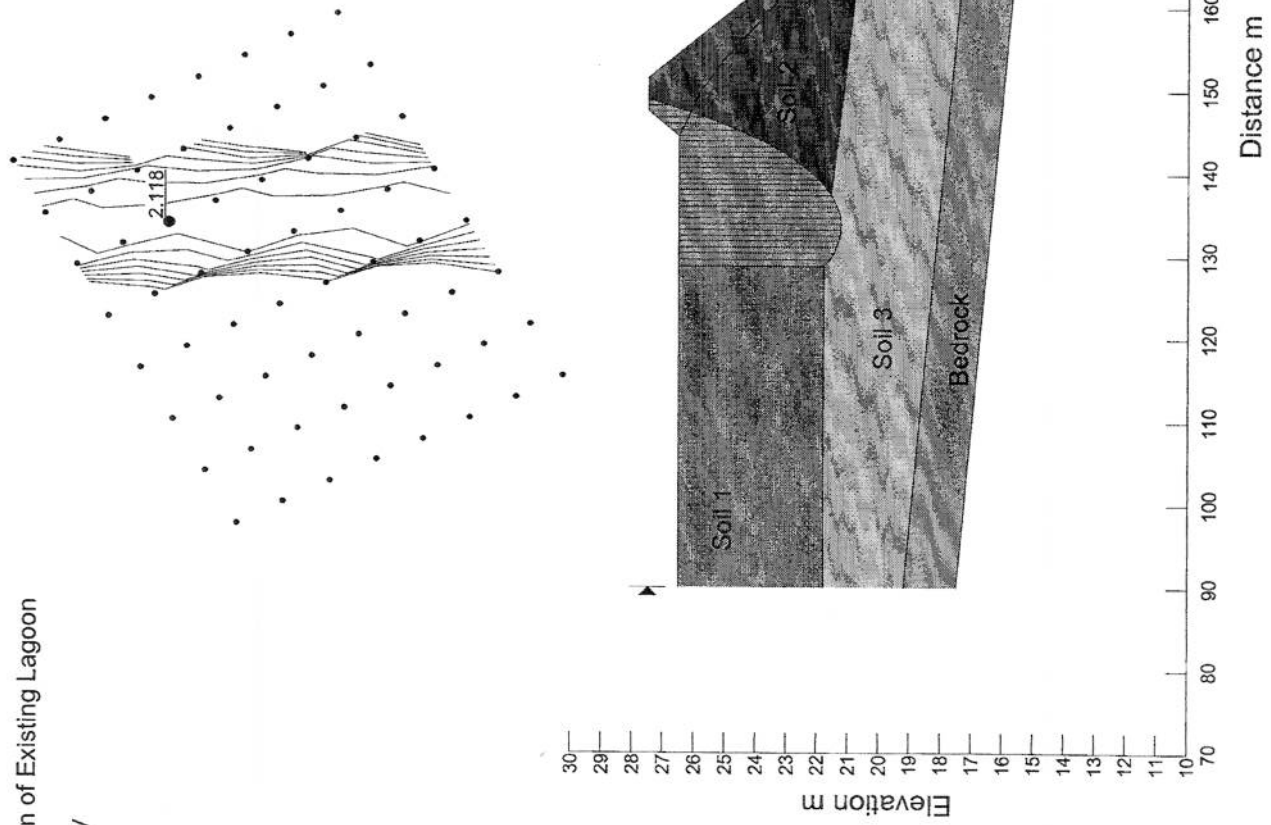
Figure 24

OTGE00019838B
Slope Stability Analysis
New Sewage Lagoon and Rehabilitation of Existing Lagoon
Igloodik, Nunavut
Section A-A Inside Slope @ 3.0 H to 1V
Fully Submerged Condition

Soil 1
Water
Soil Model No strength
Unit Weight 9.807

Soil 2
Sand and Gravel
Soil Model Mohr-Coulomb
Unit Weight 22
Cohesion 0
Phi 34

Soil 3
Sandy Silt Till
Soil Model Mohr-Coulomb
Unit Weight 22
Cohesion 0
Phi 30



OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section A-A Inside Slope @ 3.0 H to 1V
 Fully Submerged Condition
 Seismic = 0.03

Soil 1
 Water
 Soil Model No strength
 Unit Weight 9.807

Soil 2
 Sand and Gravel
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 34

Soil 3
 Sandy Silt Till
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 30

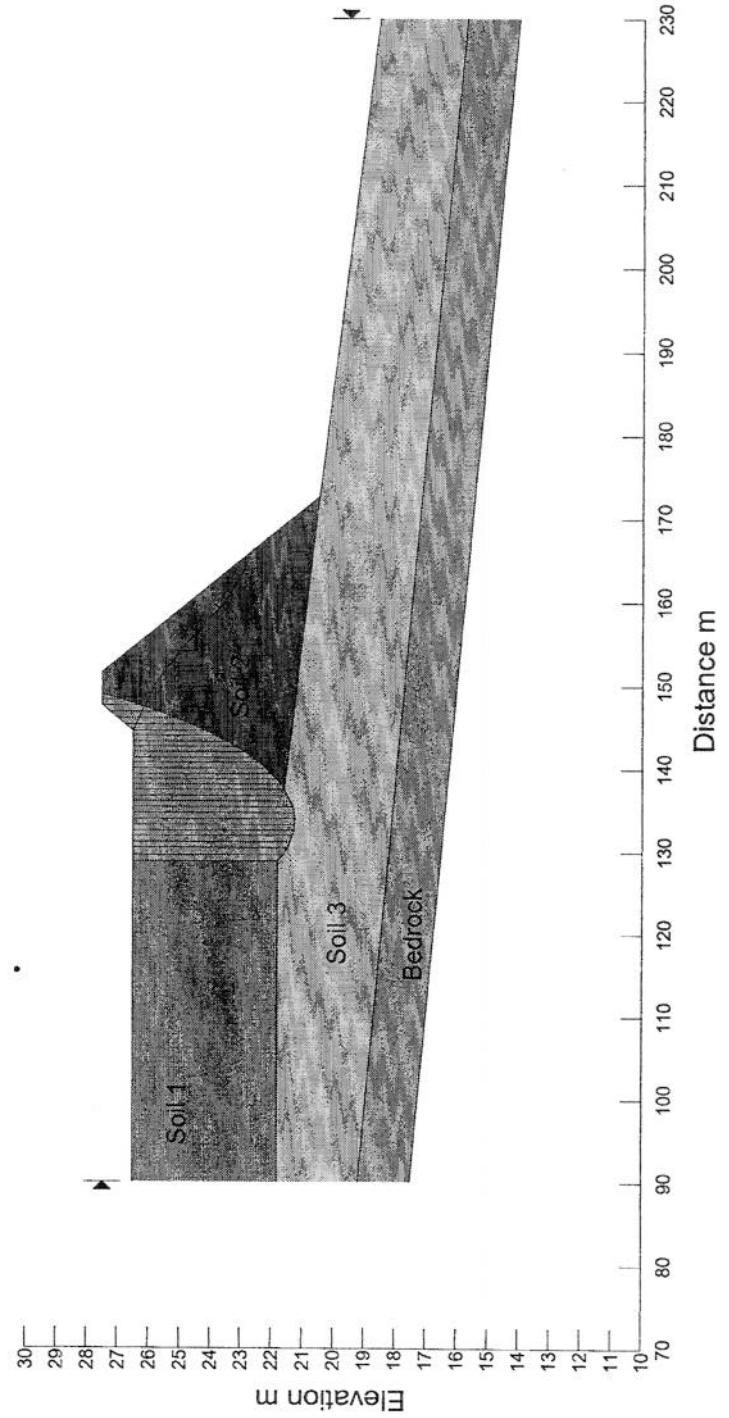
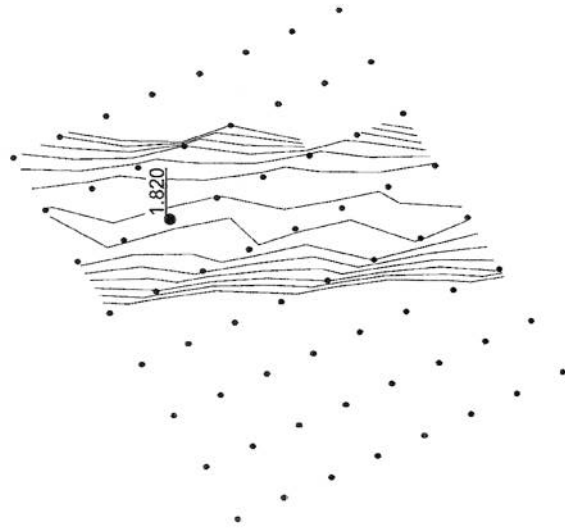


Figure 25

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section A-A Outer Slope @ 3.0 H to 1V
 Steady State Condition

Soil 1
 Water
 Soil Model No strength
 Unit Weight 9.807

Soil 2
 Sand and Gravel
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 34

Soil 3
 Sandy Silt Till
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 30

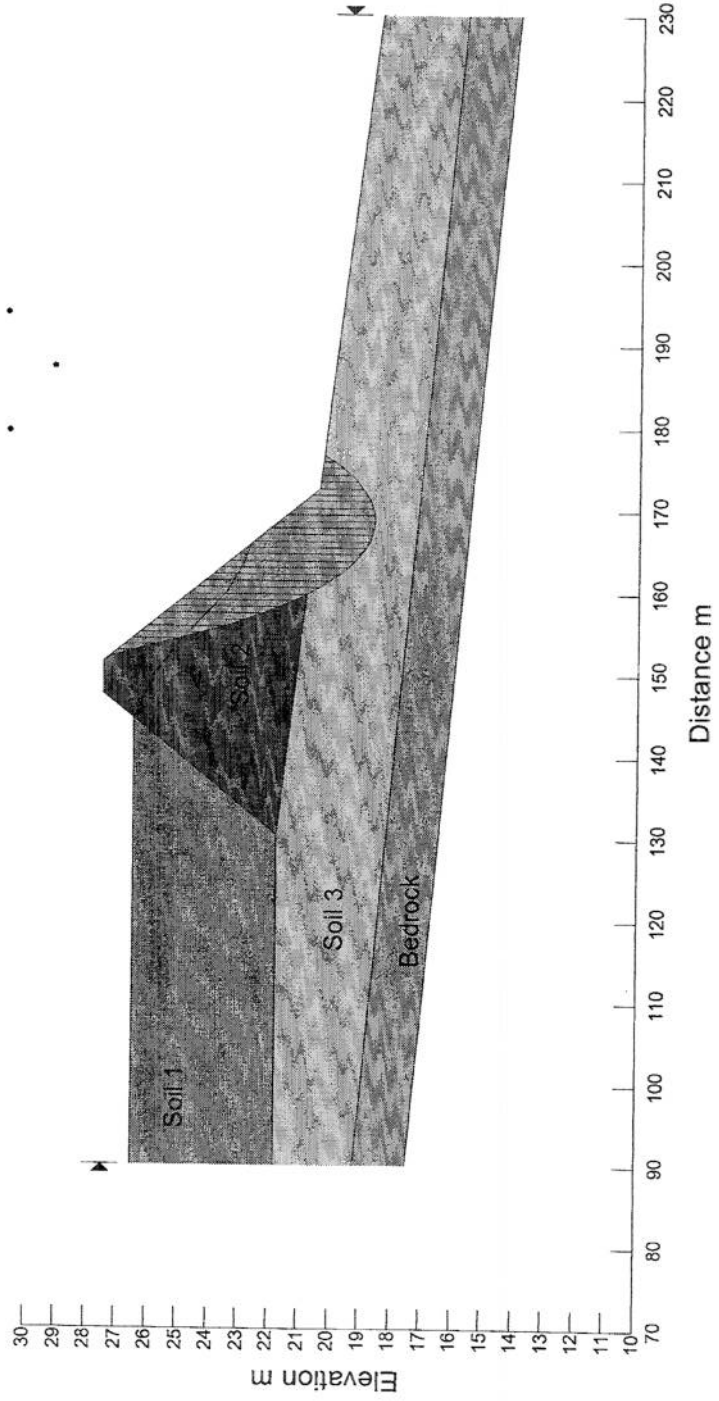
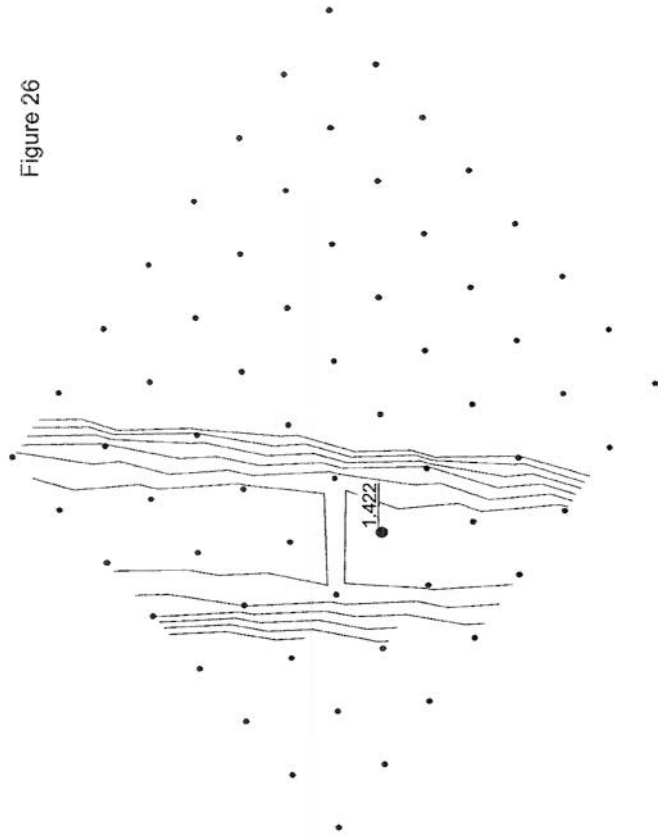


Figure 26

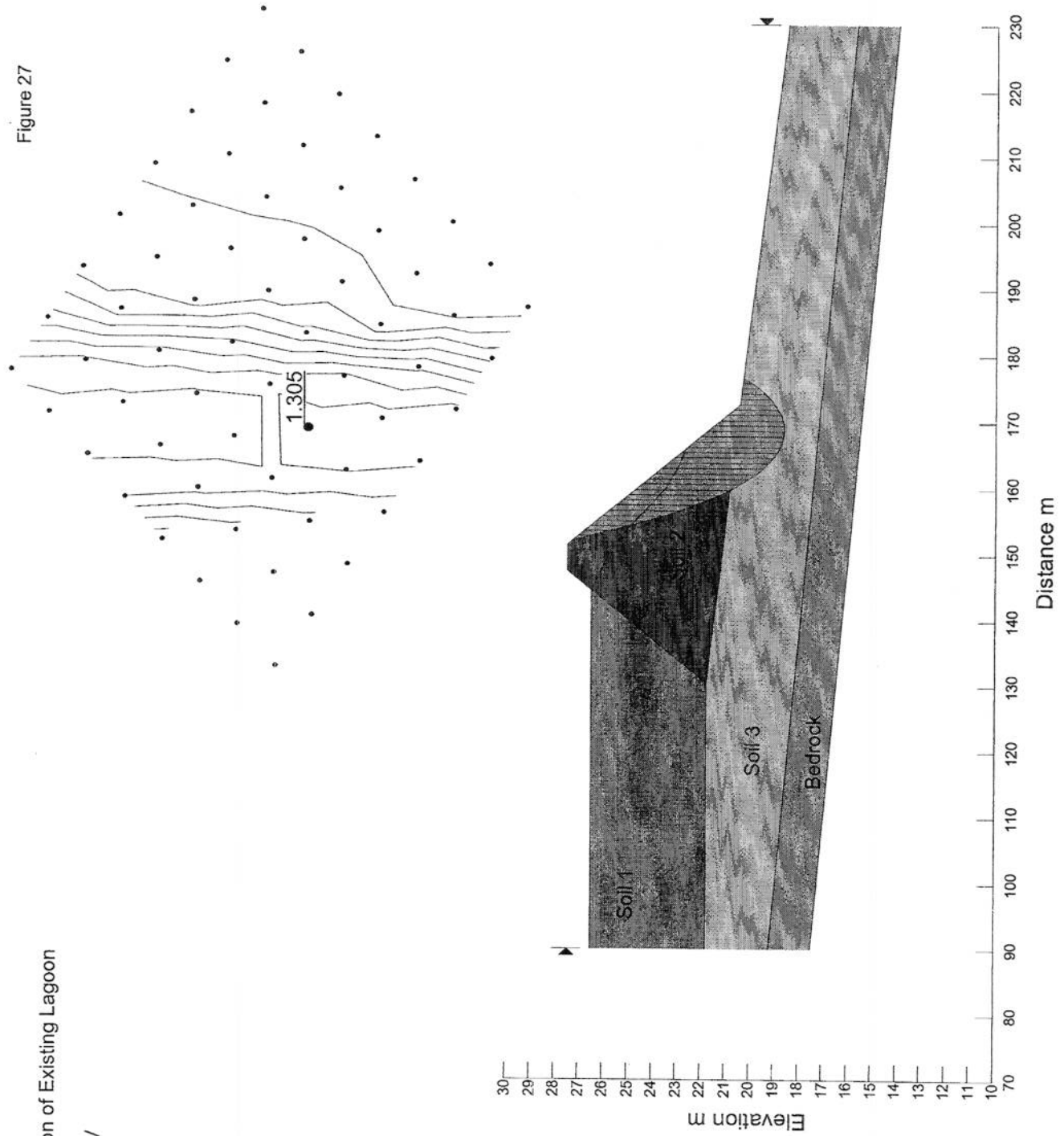
OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodlik, Nunavut
 Section A-A Outer Slope @ 3.0 H to 1V
 Steady State Seepage Condition
 Seismic = 0.03

Soil 1
 Water
 Soil Model No strength
 Unit Weight 9.807

Soil 2
 Sand and Gravel
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 34

Soil 3
 Sandy Silt Till
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 30

Figure 27



OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section A-A Outer Slope @ 3.25 H to 1V
 Steady State Seepage Condition

Soil 1
 Water
 Soil Model No strength
 Unit Weight 9.807

Soil 2
 Sand and Gravel
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 34

Soil 3
 Sandy Silt Till
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 30

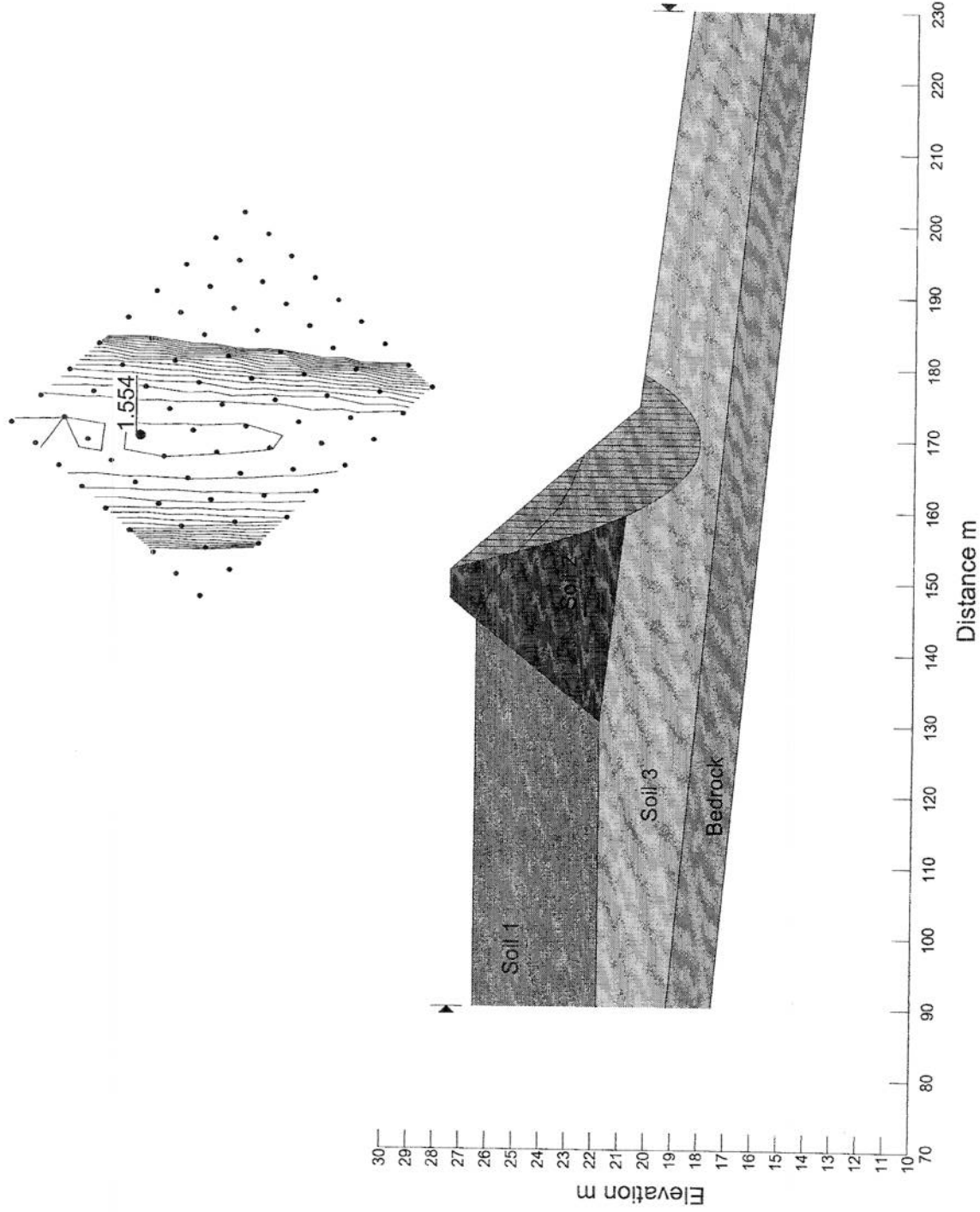


Figure 28

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section A-A Outer Slope @ 3.25 H to 1V
 Steady State Seepage Condition
 Seismic = 0.03

Soil 1
 Water
 Soil Model No strength
 Unit Weight 9.807

Soil 2
 Sand and Gravel
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 34

Soil 3
 Sandy Silt Till
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 30

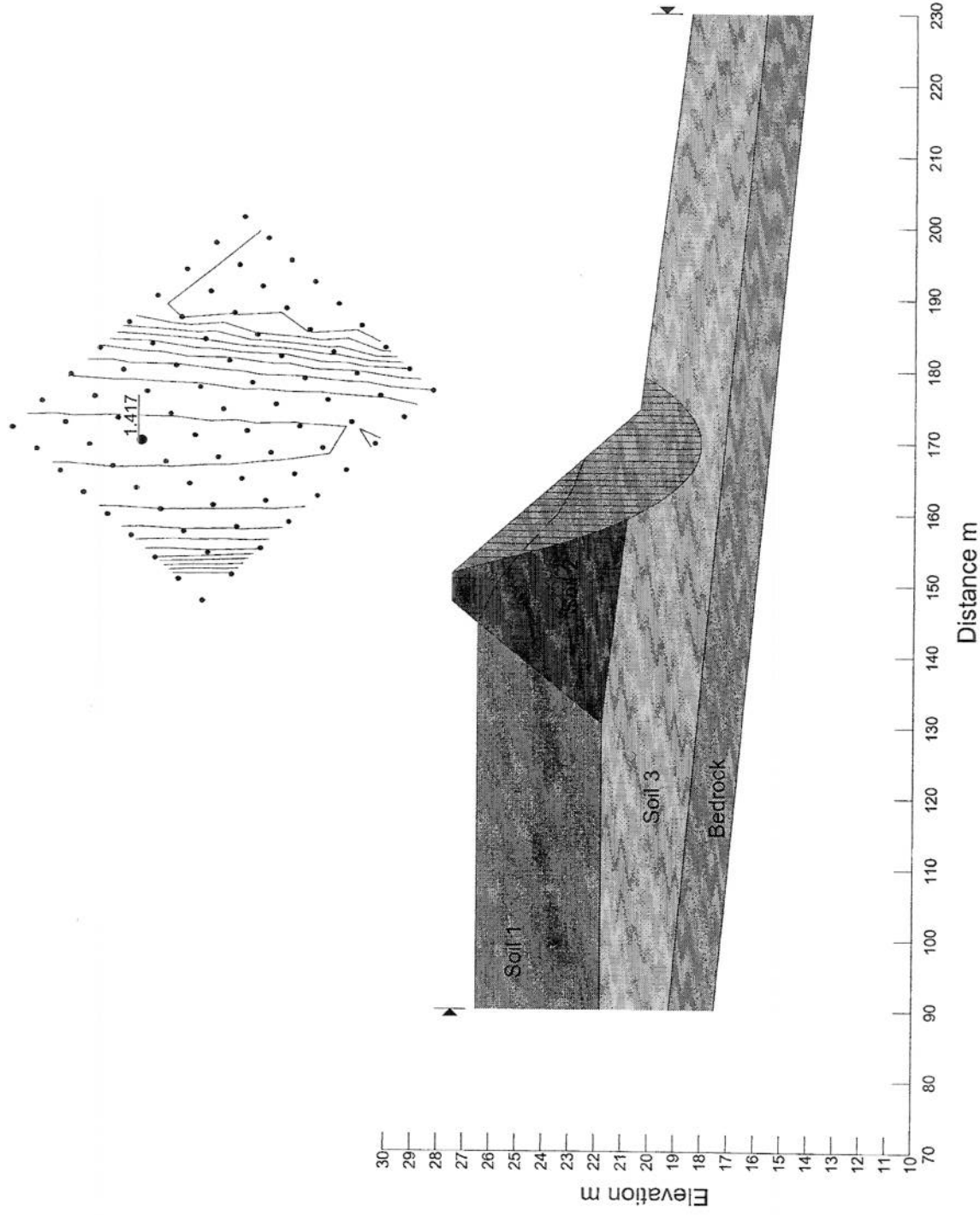
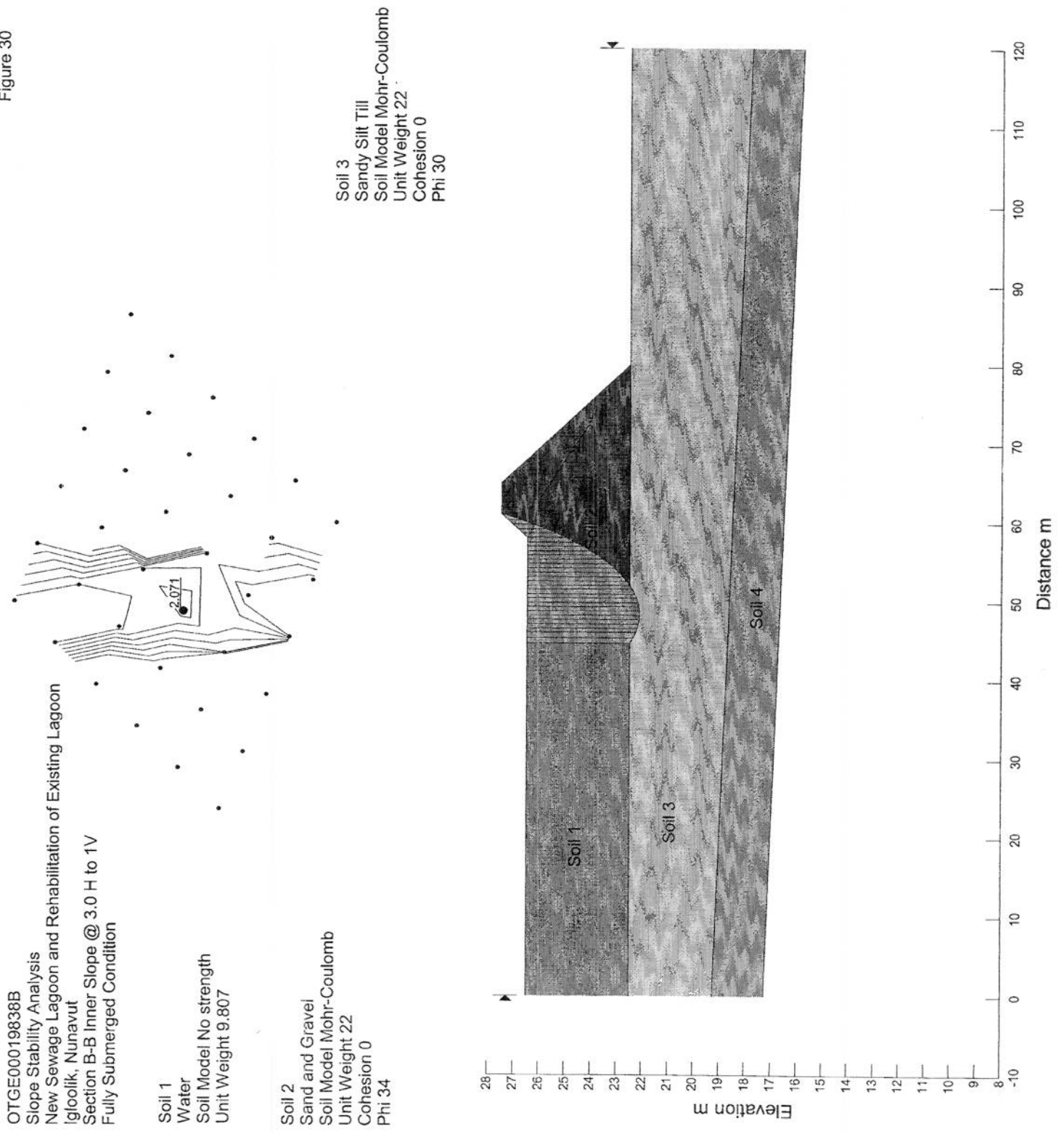


Figure 29

Figure 30



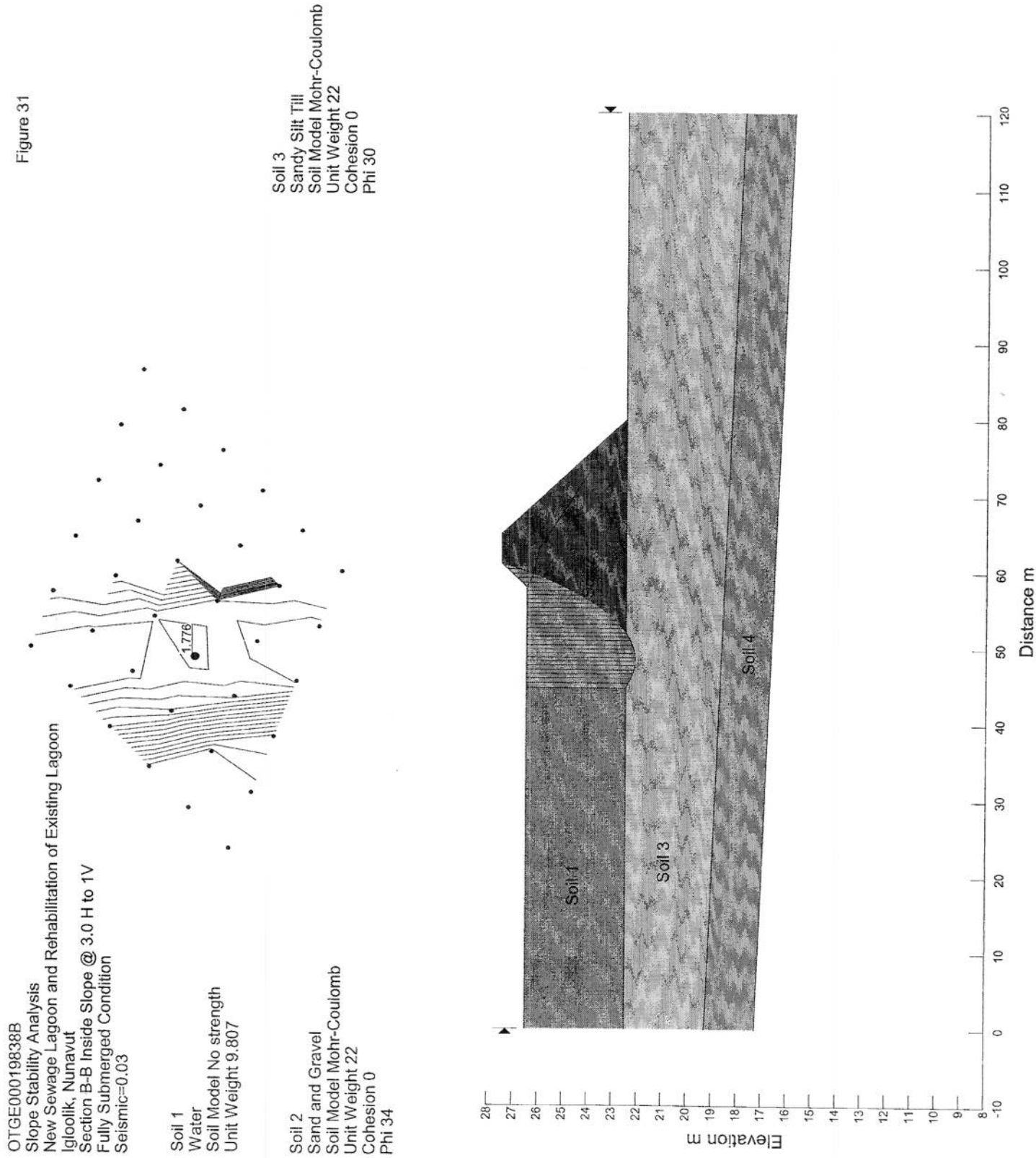


Figure 31

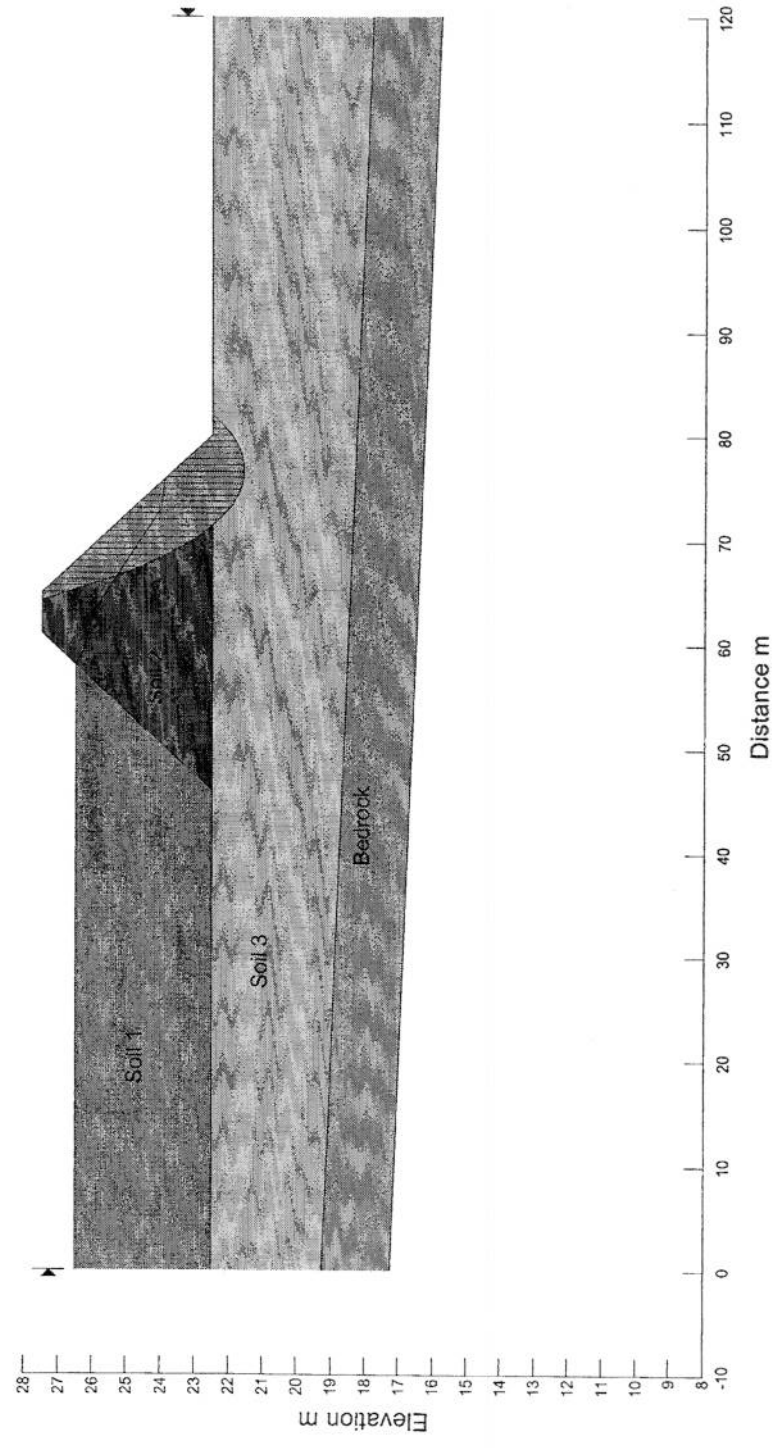
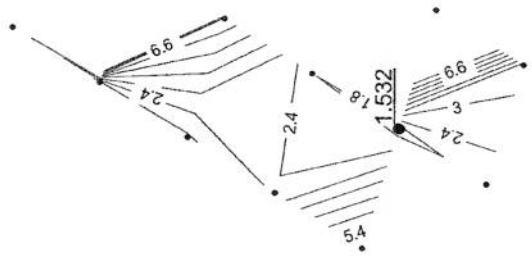
Figure 32

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodlik, Nunavut
 Section B-B Outside Slope @ 3.0 H to 1V
 Steady State Seepage Condition

Soil 1
 Water
 Soil Model No strength
 Unit Weight 9.807

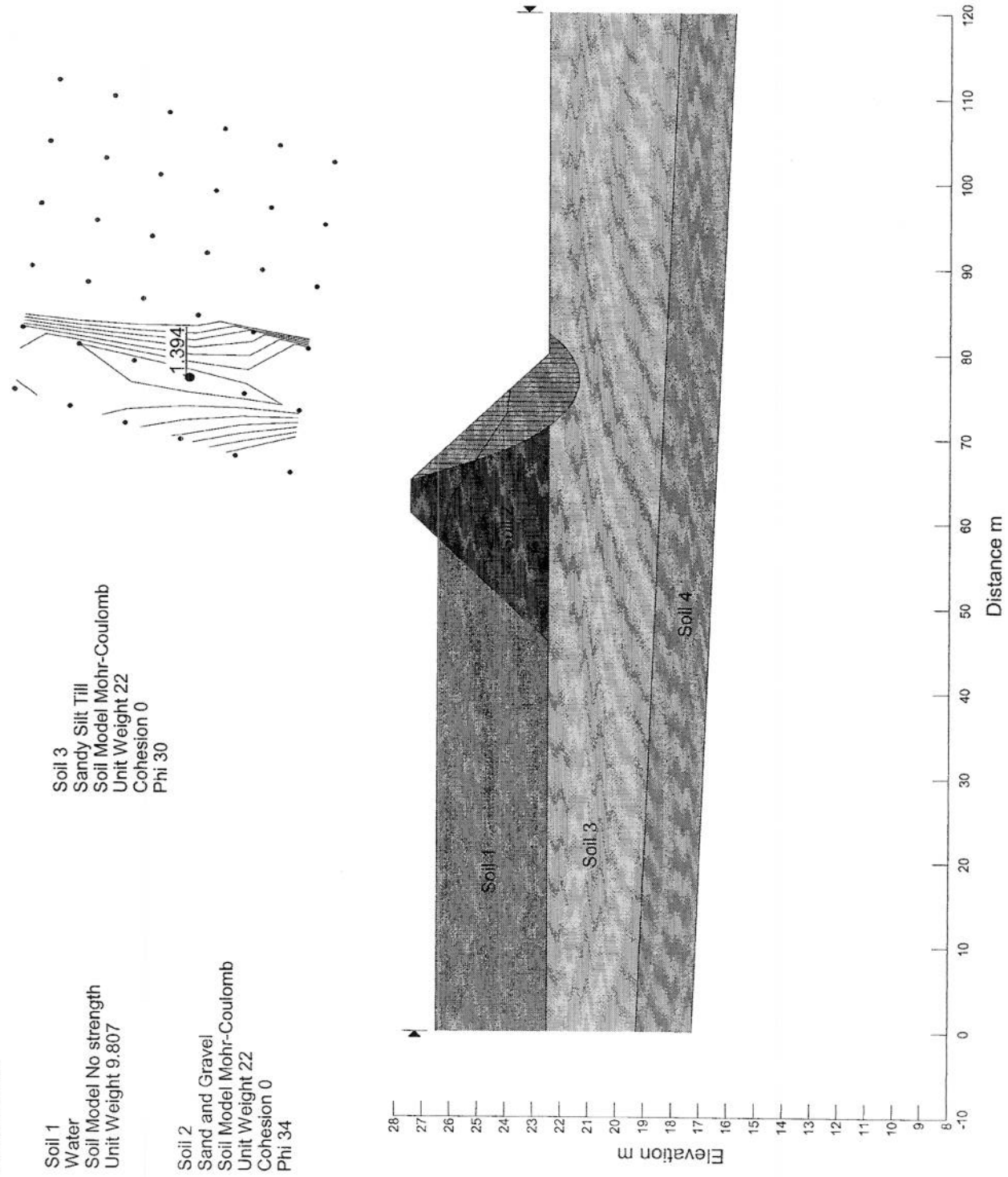
Soil 2
 Sand and Gravel
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 34

Soil 3
 Sandy Silt Till
 Soil Model Mohr-Coulomb
 Unit Weight 22
 Cohesion 0
 Phi 30



OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section B-B Outside Slope @ 3.0 H to 1V
 Steady State Seepage Condition
 Seismic=0.03

Figure 33



OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section C-C Existing Inside Slope @1.7H:1V
 Fully Submerged Condition

Figure 34

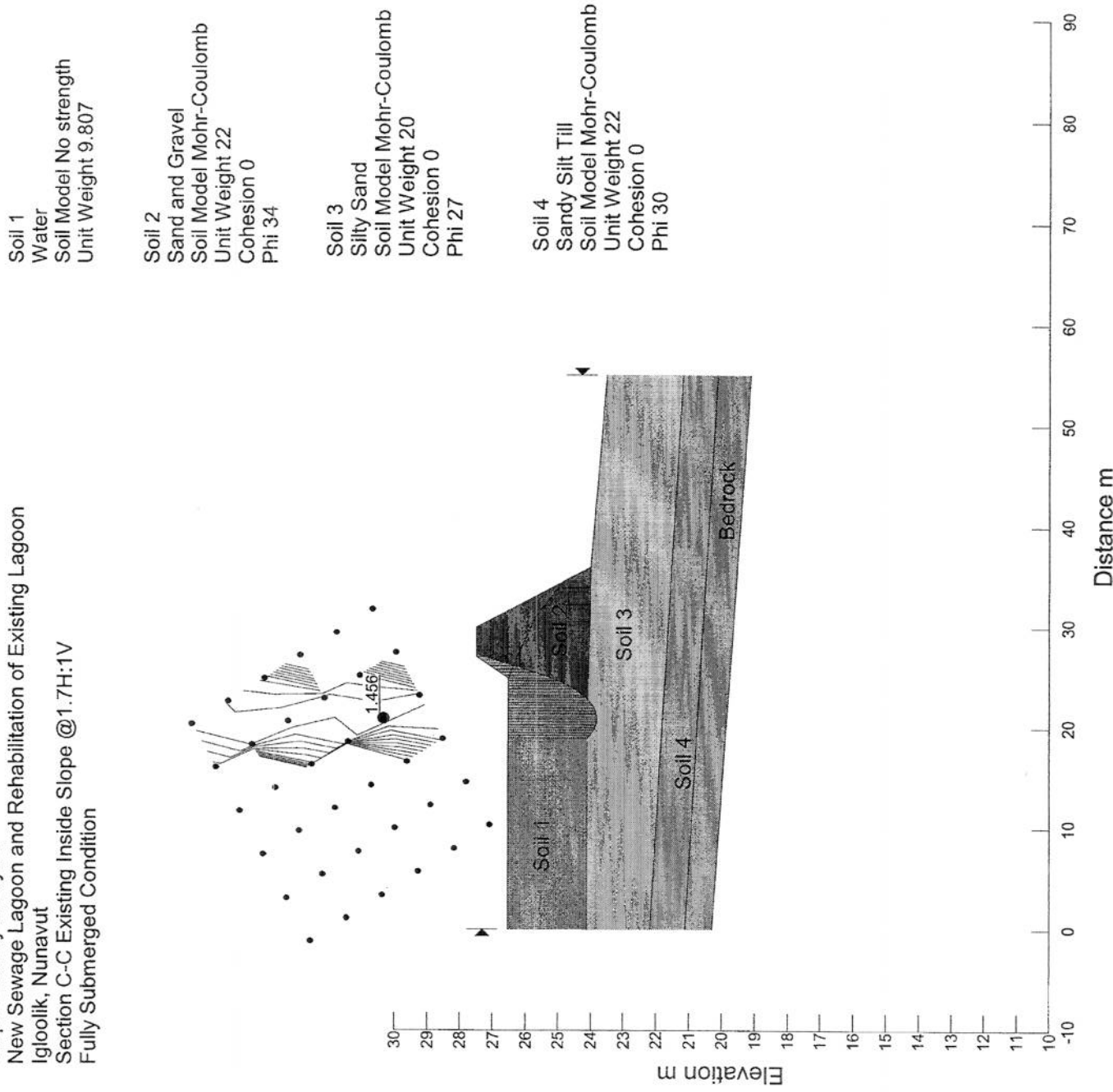


Figure 35

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section C-C Existing Inside Slope @1.7H:1V
 Fully Submerged Condition
 Seismic = 0.03

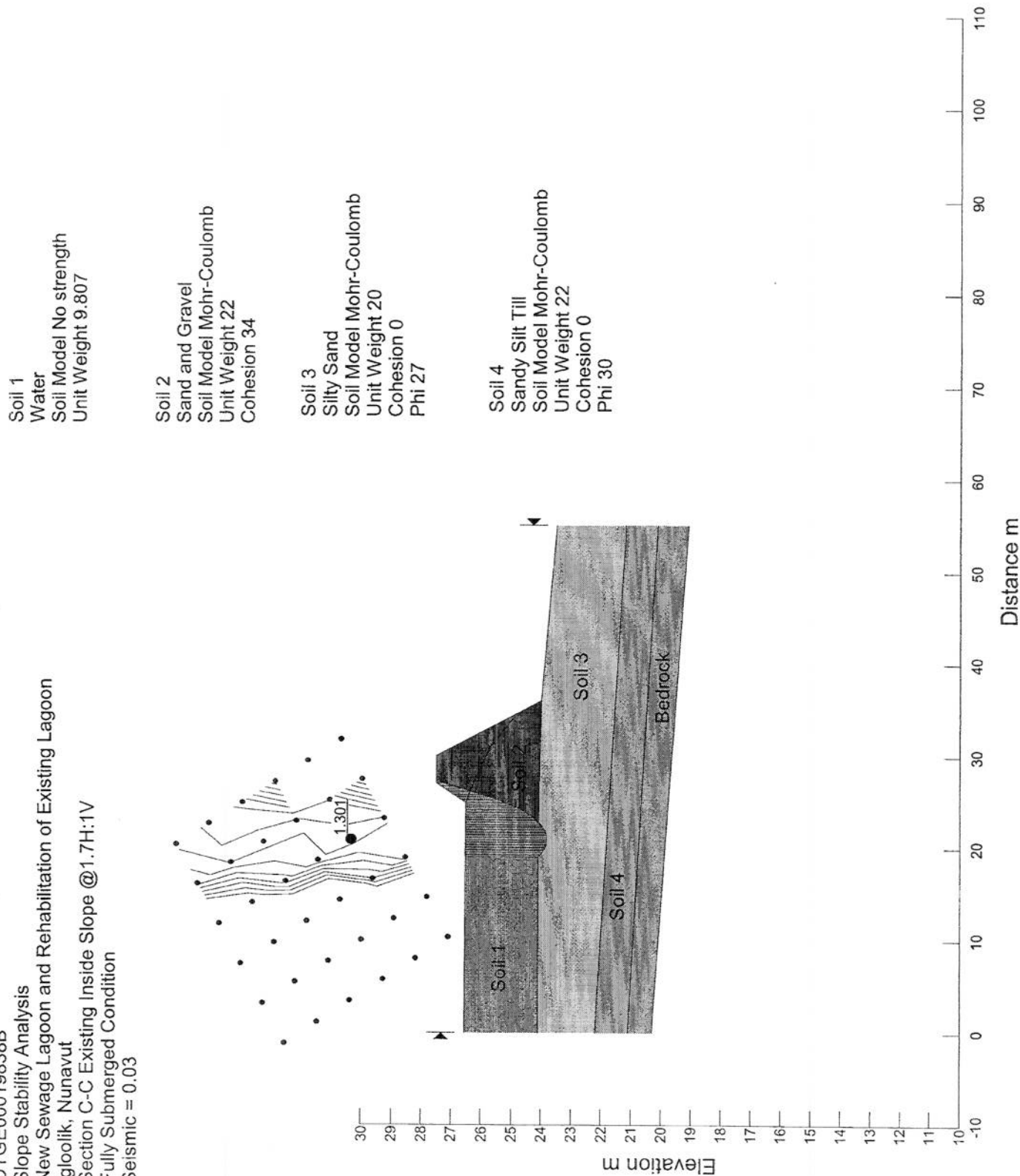


Figure 36

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section C-C Existing Outside Slope @ 2H:1V
 Steady State Seepage

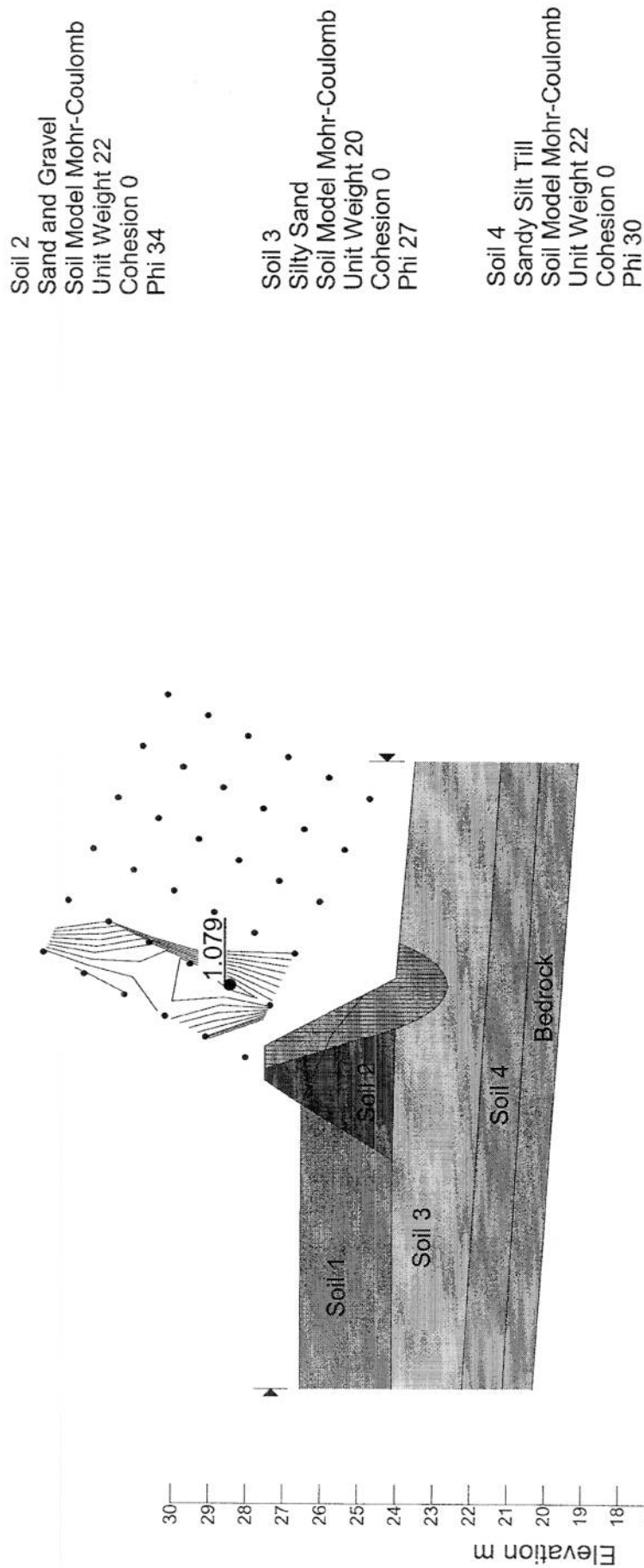


Figure 37

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section C-C Existing Outside Slope @ 2H:1V
 Steady State Seepage
 Seismic = 0.03

- | | |
|-------------------------|-------------------|
| Soil 1 | Water |
| Soil Model No strength | Unit Weight 9.807 |
| Soil 2 | Sand and Gravel |
| Soil Model Mohr-Coulomb | Unit Weight 22 |
| | Cohesion 0 |
| | Phi 34 |
| Soil 3 | Silty Sand |
| Soil Model Mohr-Coulomb | Unit Weight 20 |
| | Cohesion 0 |
| | Phi 27 |
| Soil 4 | Sandy Silt Till |
| Soil Model Mohr-Coulomb | Unit Weight 22 |
| | Cohesion 0 |
| | Phi 30 |

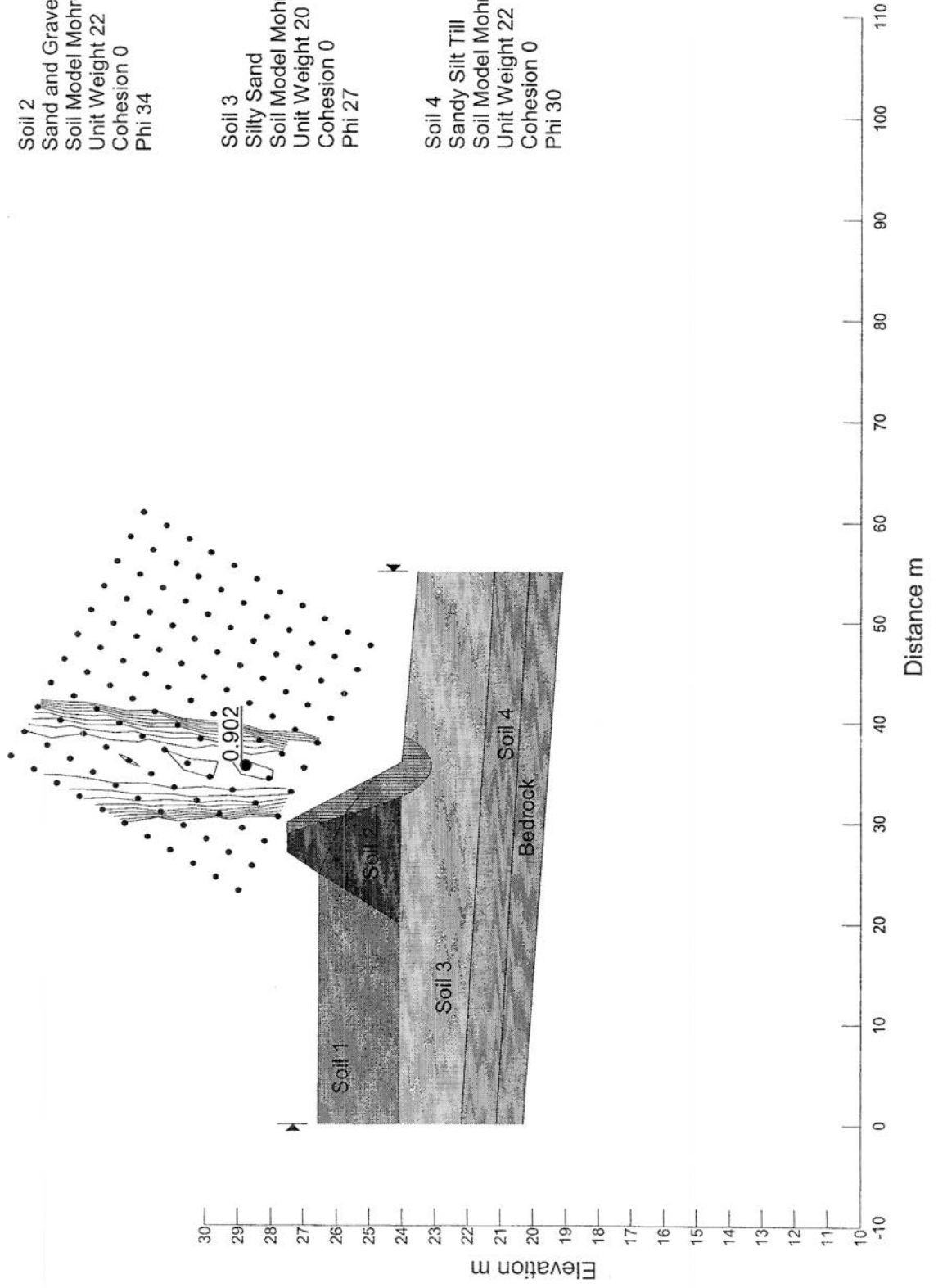
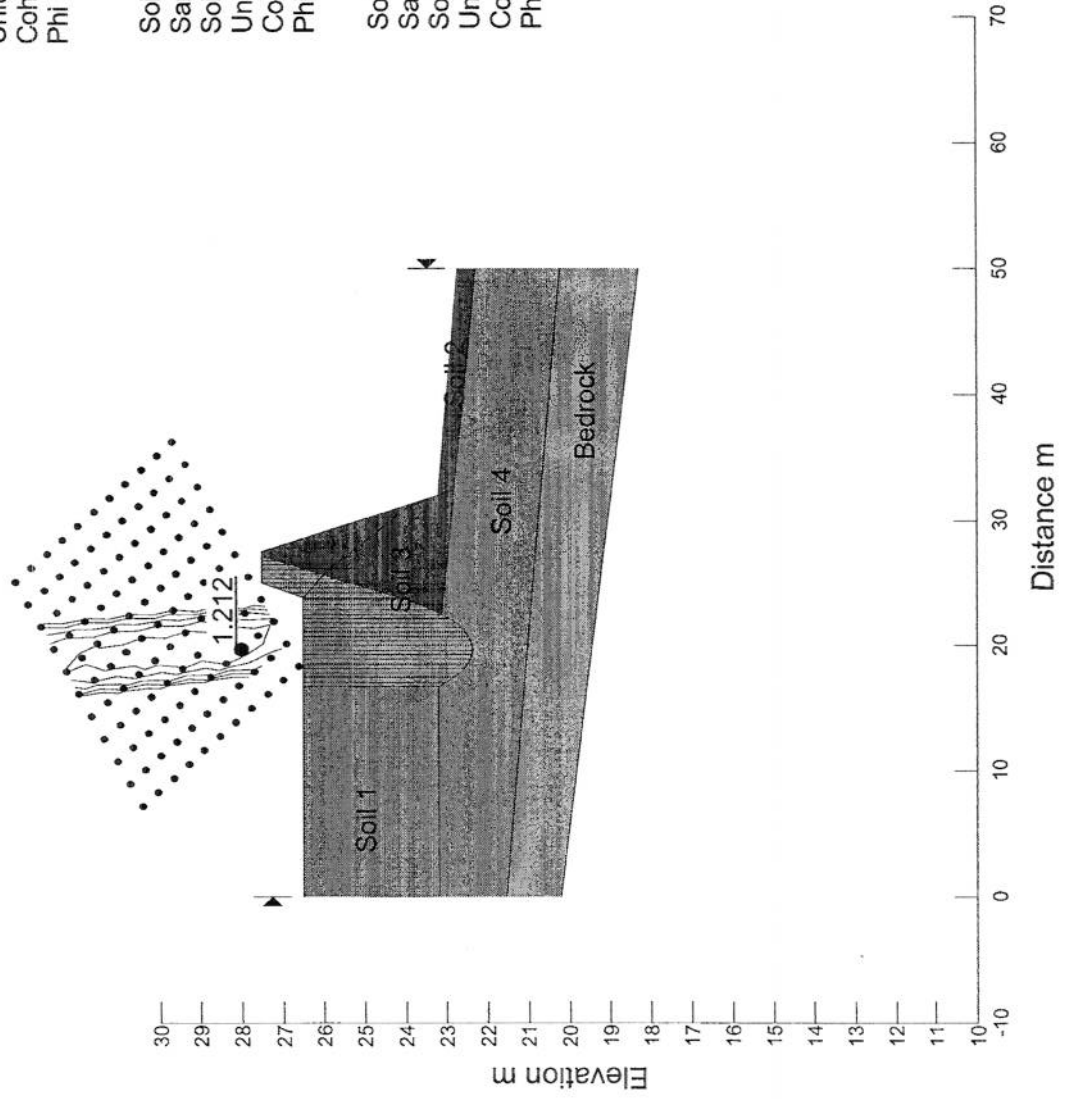


Figure 38

OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section D-D Existing Inside Slope @ 1.16H:1V
 Fully Submerged Condition

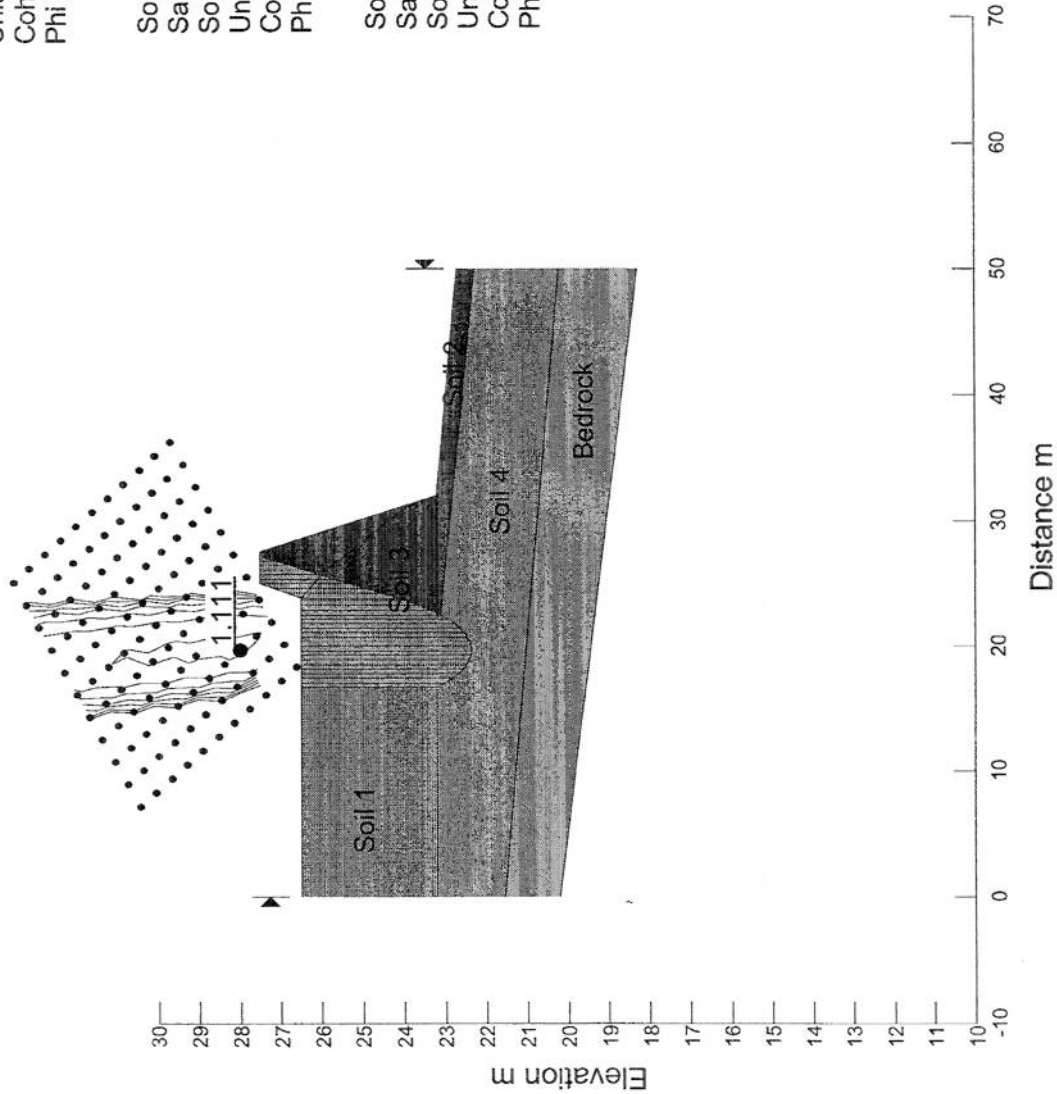
- | | | | |
|------------------------|-------------------------|-------------------------|-------------------------|
| Soil 1 | Soil 2 | Soil 3 | Soil 4 |
| Water | Top Soil | Sand and Gravel | Sandy Silt |
| Soil Model No strength | Soil Model Mohr-Coulomb | Soil Model Mohr-Coulomb | Soil Model Mohr-Coulomb |
| Unit Weight 9.807 | Unit Weight 20 | Unit Weight 22 | Unit Weight 18 |
| | Cohesion 0 | Cohesion 0 | Cohesion 0 |
| | Phi 27 | Phi 34 | Phi 27 |



OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section D-D Existing Inside Slope @ 1.16H:1V
 Fully Submerged Condition
 Seismic = 0.03

Figure 39

- | | | | |
|------------------------|-------------------------|-------------------------|-------------------------|
| Soil 1 | Soil 2 | Soil 3 | Soil 4 |
| Water | Top Soil | Sand and Gravel | Sandy Silt |
| Soil Model No strength | Soil Model Mohr-Coulomb | Soil Model Mohr-Coulomb | Soil Model Mohr-Coulomb |
| Unit Weight 9.807 | Unit Weight 20 | Unit Weight 22 | Unit Weight 18 |
| | Cohesion 0 | Cohesion 0 | Cohesion 0 |
| | Phi 27 | Phi 34 | Phi 27 |



OTGE00019838B
 Slope Stability Analysis
 New Sewage Lagoon and Rehabilitation of Existing Lagoon
 Igloodik, Nunavut
 Section D-D Existing Outside Slope @ 1.06H:1V
 Steady State Seepage Condition

Figure 40

