APPENDIX F-2

SLOPE STABILITY ANALYSES
LIQUEFACTION TYPE SECTIONS

Newby Island Landfill: Job #: 2004-0049
Type Section TS-1: Sta. 50+46
Type Xsec TS-1_0400S04.gsz
Date: 6/1/2008
Time: 7:40:49 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.092

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

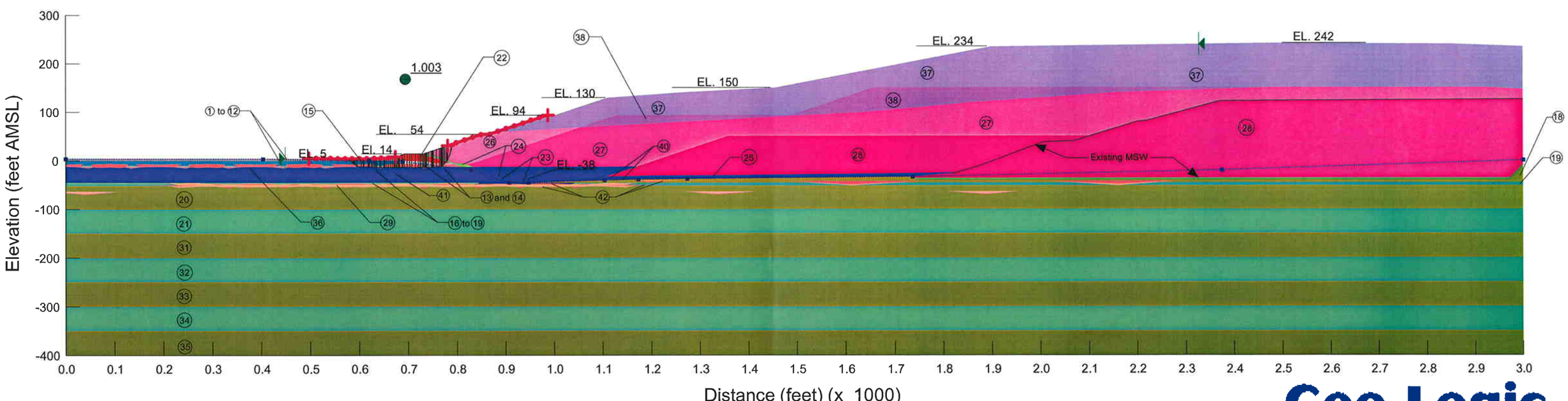
Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 250

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 500

Case: Potential El. -15 Liquefied Sand Failures

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-1: Sta. 50+46
Type Xsec TS-1_510S03.gsz
Date: 6/7/2008
Time: 1:45:29 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.098

Case: Potential El. -25 Liquefied Sand Failures

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

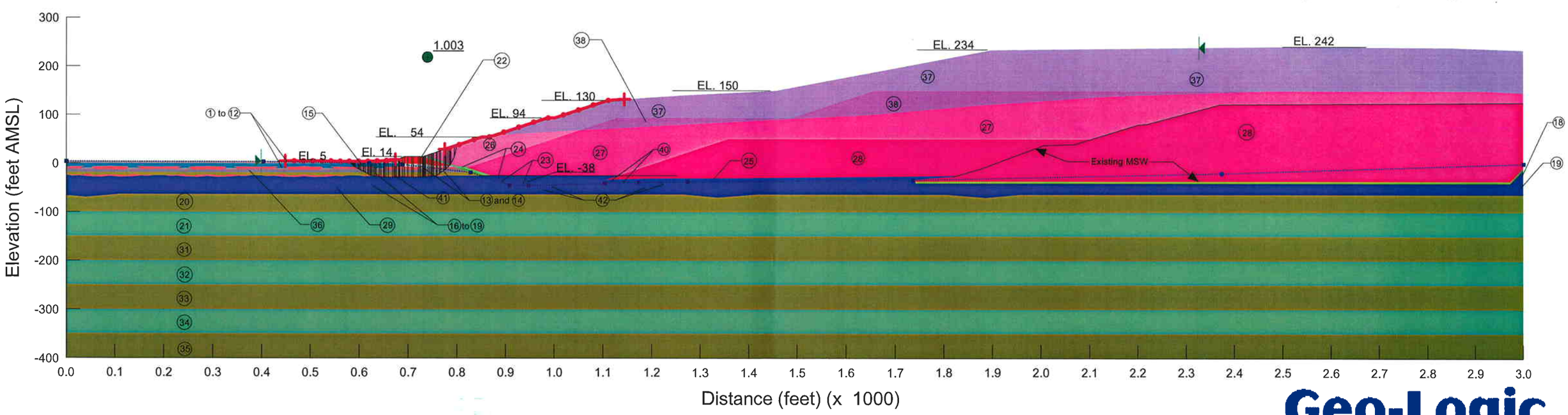
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.12
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-1: Sta. 50+46
Type Xsec TS-1_0610S04.gsz
Date: 6/7/2008
Time: 1:35:11 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.174

Case: Potential El. -45 Liquefied Sand Failures

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

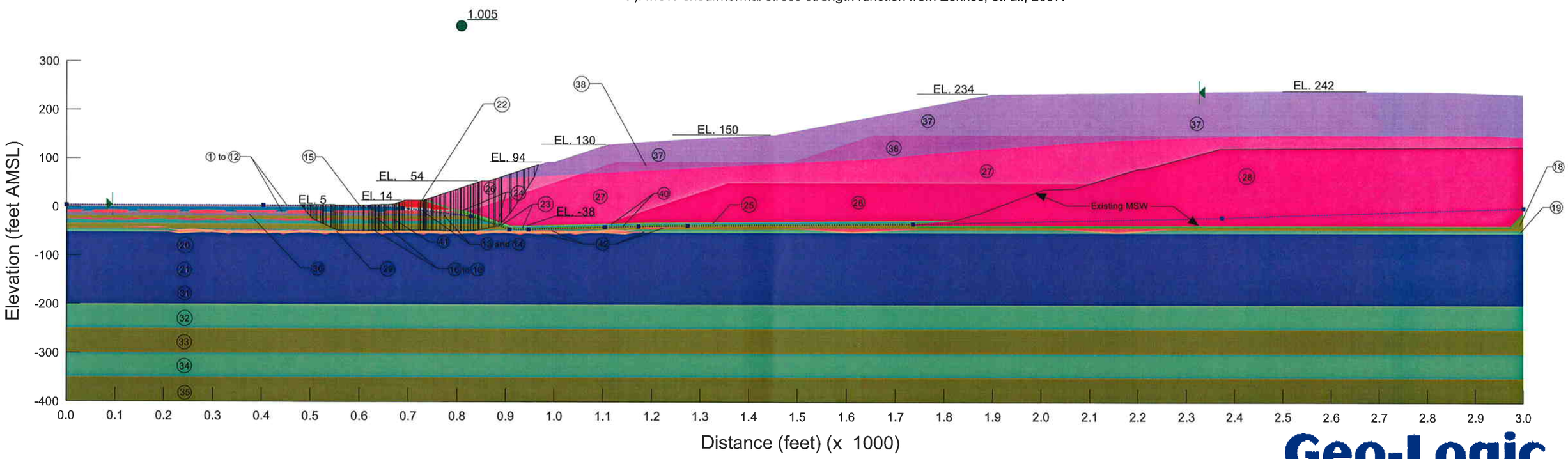
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.12
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-1: Sta. 50+46
Type Xsec TS-1_0710S01.gsz
Date: 6/6/2008
Time: 6:22:20 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: No
Horz Seismic Load: 0.23

Case: Remediation of Potential El. -15 Liquefied Sand
12.5% replacement ratio; slurry = 100 psi
liq-sand = 0 psf (1800 psf slurry + soil)

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

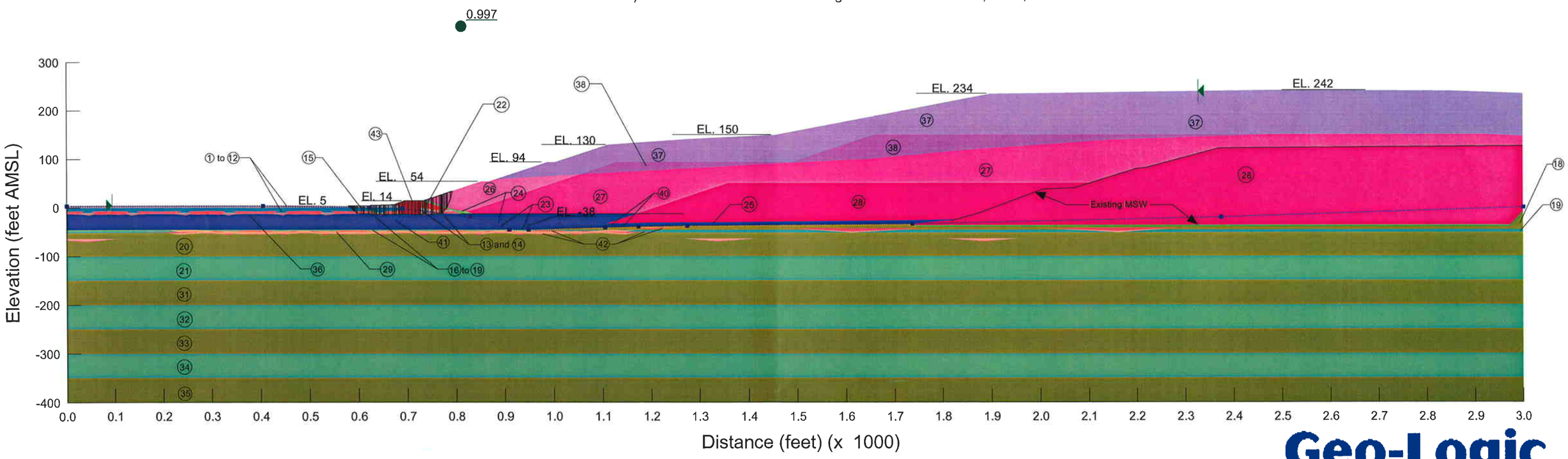
Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Material #: 43
Dike Remediation
Model: Undrained (Phi=0)
Wt: 125
C: 1800 psf

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-1: Sta. 50+46
Type Xsec TS-1_0713S05.gsz
Date: 6/8/2008
Time: 5:51:24 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.54

Case: Remediation of Potential El. -25 Liquefied Sand
12.5% replacement ratio; slurry = 100 psi
liq-sand = 0 psf (1800 psf slurry + soil)

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

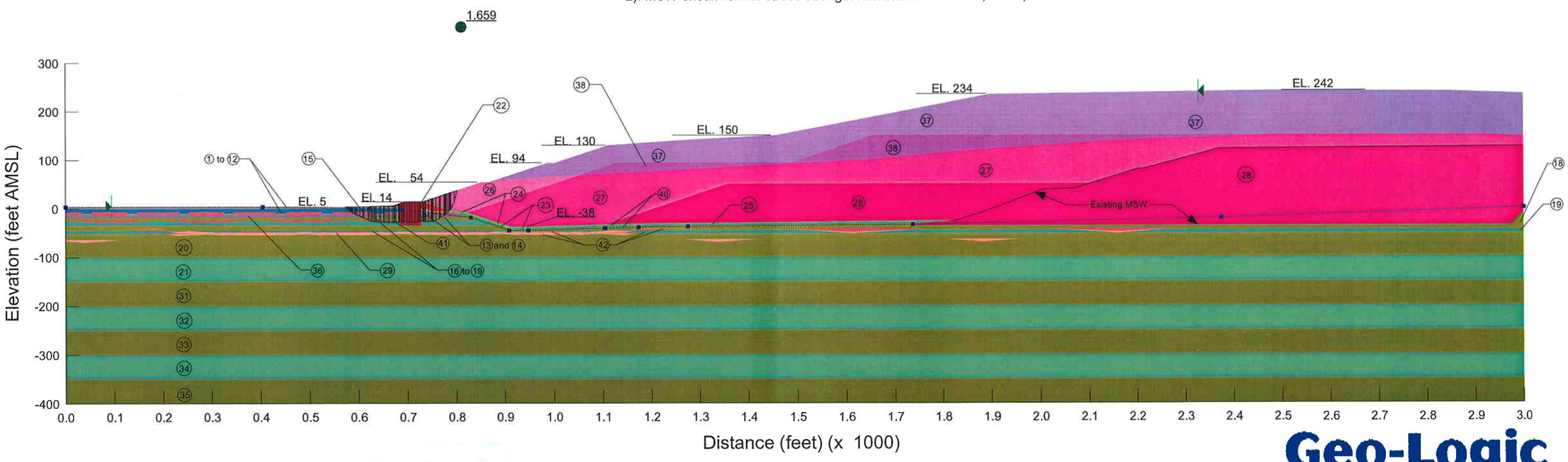
Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Material #: 43
Dike Remediation
Model: Undrained (Phi=0)
Wt: 125
C: 13000 psf

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill; Job #: 2004-0049
Type Section TS-2: Sta. 25+93
Type Xsec TS-2_0201S02.gsz
Date: 6/2/2008
Time: 3:26:21 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.1

Case: Potential El. -15 Liquefied Sand

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

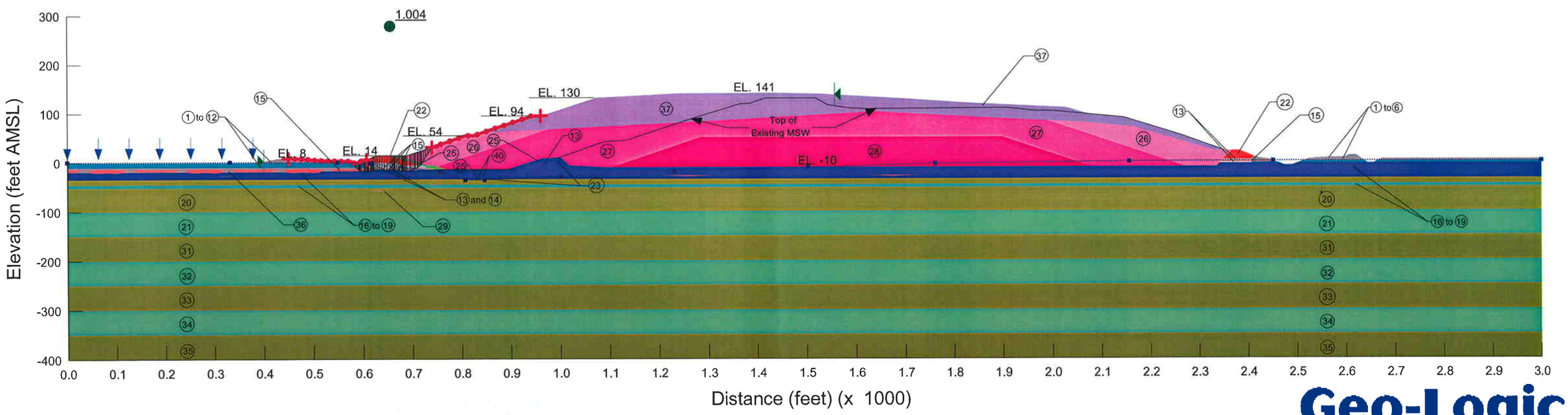
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill; Job #: 2004-0049
Type Section TS-2: Sta. 25+93
Type Xsec TS-2_0323S03.gsz
Date: 6/7/2008
Time: 3:14:16 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.15

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

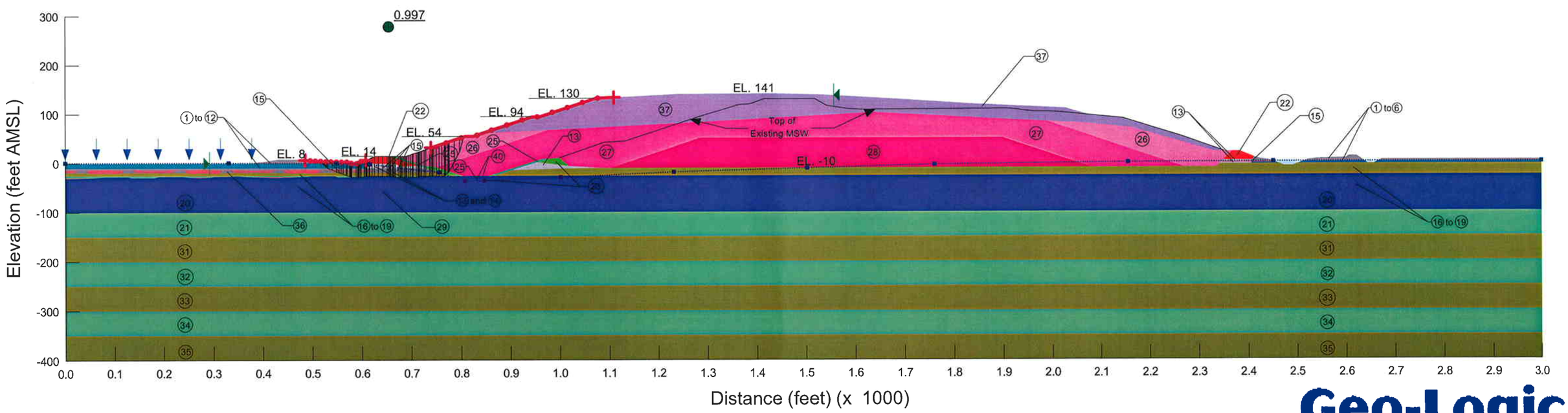
Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Case: Potential El. -25 Liquefied Sand Failures

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill; Job #: 2004-0049
Type Section TS-2: Sta. 25+93
Type Xsec TS-2_0412S02.gsz
Date: 6/7/2008
Time: 4:19:51 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.16

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

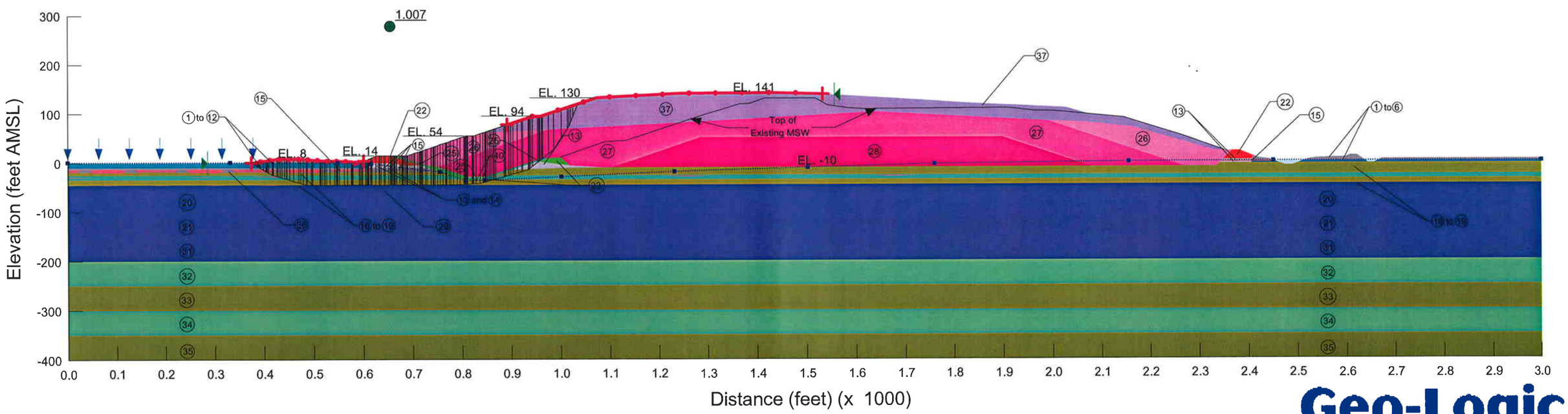
Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Case: Potential El. -45 Liquefied Sand Failures

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill; Job #: 2004-0049
Type Section TS-2B: Sta. 150+00
Type Xsec TS-2B_0002S05.gsz
Date: 6/2/2008
Time: 4:50:01 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.138

Case: Potential Liquefaction of El. -1 Sand

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Lt to Rt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Lt to Rt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Lt to Rt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

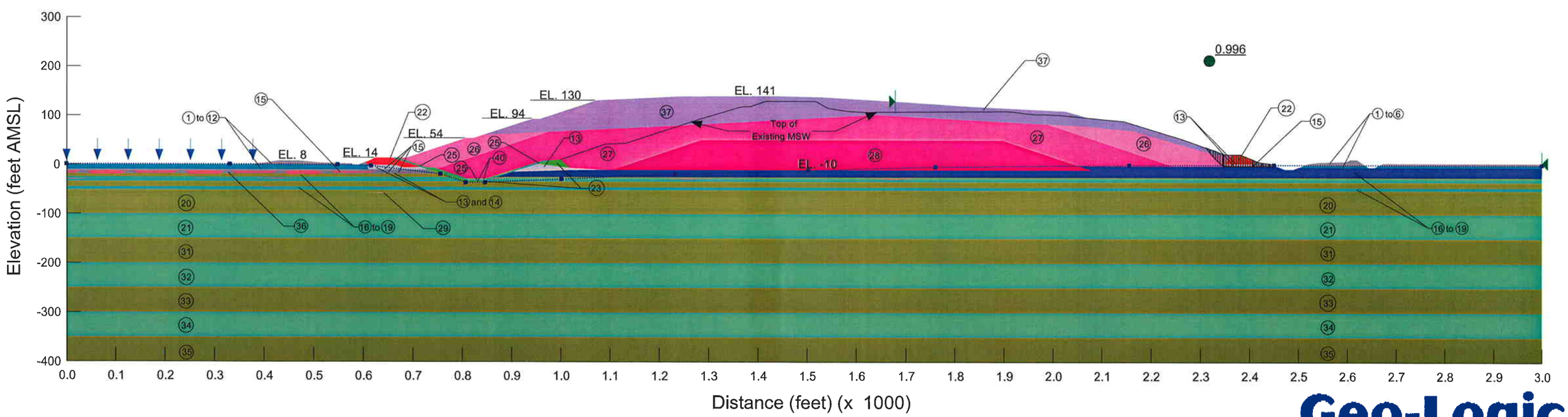
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-3: Sta. 45+00
Type Xsec TS-3_0211S02.gsz
Date: 6/7/2008
Time: 4:46:01 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.143

Case: Potential El. -15 Liquefied Sand

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW abover Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

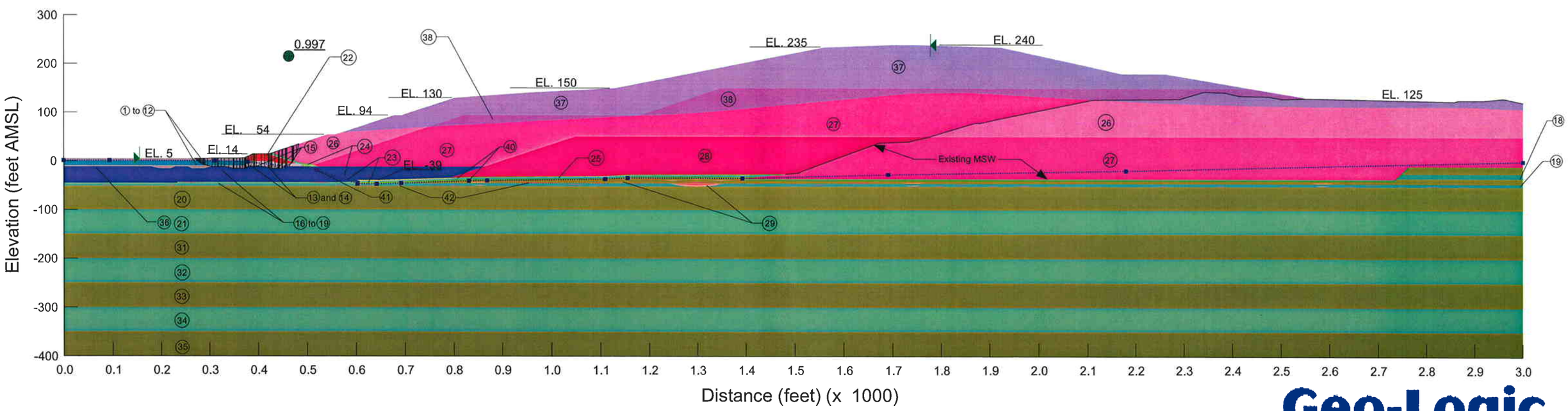
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-3: Sta. 45+00
Type Xsec TS-3_0301S04.gsz
Date: 6/7/2008
Time: 5:05:10 PM
Method: Morgenstern-Price
Slip Surface Option: Fully-Specified
Optimization: Yes
Horz Seismic Load: 0.267

Case: Potential El. -25 Liquefied Sand

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

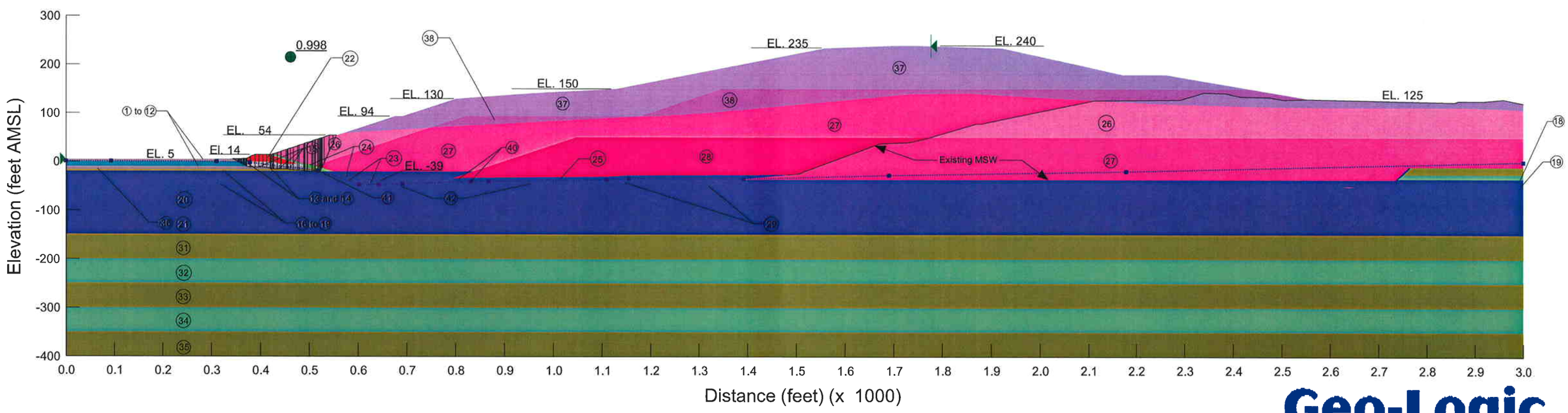
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



Geo-Logic ASSOCIATES

Newby Island Landfill: Job #: 2004-0049
Type Section TS-3: Sta. 45+00
Type Xsec TS-3_0403S03.gsz
Date: 6/7/2008
Time: 5:33:53 PM
Method: Morgenstern-Price
Slip Surface Option: Entry and Exit
Optimization: Yes
Horz Seismic Load: 0.157

Case: Potential El. -45 Liquefied Sand

Material #: 1 through 12
Young Bay Mud
OCR variable (1.1 to 3.0)
Wt: 113
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 200 to 370

Material #: 13 and 14
Young Bay Mud beneath Dike
OCR =1.0
Wt: 113
Model: SHANSEP (Su/P)
Norm. Consol. Su/P Ratio: 0.3
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 570

Material #: 15
Sand El -15 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.08
Minimum Strength: 150

Material #: 16 to 21 and 31 to 35
Older Bay Alluvium
OCR = 1.5-2.0
Wt: 127
Model: SHANSEP (Su/P)(OCR)exp(Λ)
Effective O.C. Su/P Ratio: 0.524 to 0.416
Anisotropic OBA Strength: Rt to Lt Slopes
Minimum Strength: 730 to 9880

Material #: 22
Dike
Wt: 120
Phi: 27.6
C: 240

Material #: 23
Compacted Subgrade
Wt: 120
Phi: 27.6
C: 240

Material #: 24
Side Liner (residual)
Wt: 10
Phi: 8
C: 0

Material #: 25
Base Liner (residual)
Wt: 10
Phi: 14
C: 0

Material #: 26 to 28
MSW-Dynamic
Wt: 80 to 105
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 29
Sand (non-liquefied)
Wt: 125
Phi: 32
C: 50

Material #: 36
Young Bay Mud
OCR = 1.0
Wt: 113
Model: SHANSEP (Su/P)
Anisotropic YBM Strength: Rt to Lt Slopes
Minimum Strength: 300

Material #: 37 and 38
MSW above Permit-Dynamic (80 pcf)
Wt: 80 to 90
Phi: Strength Fn: 2
C: Strength Fn: 2

Material #: 39
Bedrock (Impenetrable)

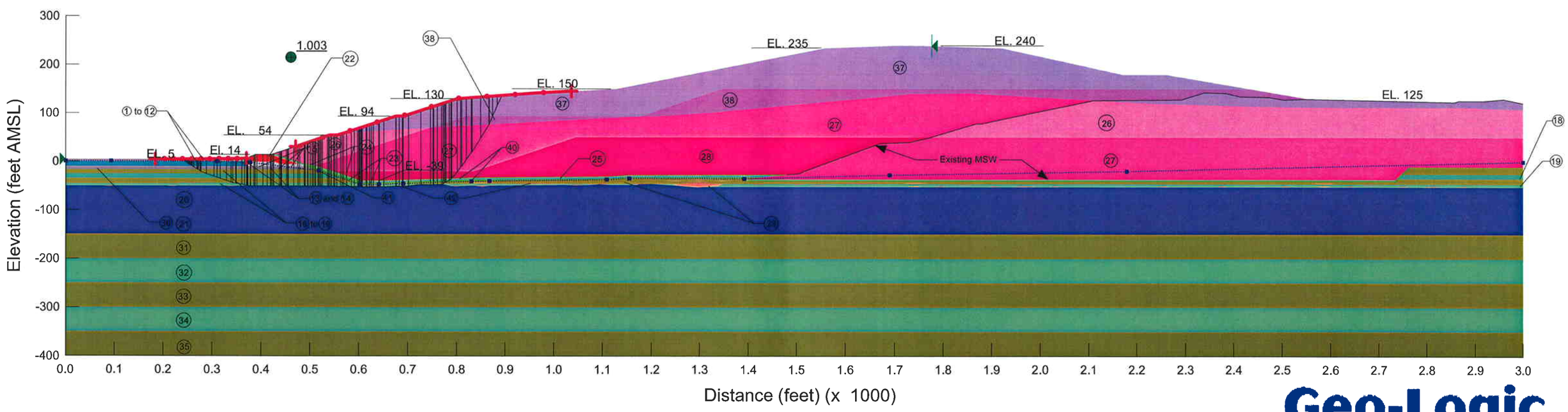
Material #: 40
Drainage Gravel
Wt: 125
Phi: 38
C: 0

Material #: 41
Sand El -25 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.09
Minimum Strength: 300

Material #: 42
Sand El -45 (liquefied)
Model: S=f(overburden)
Unit Weight: 125 pcf
Tau/Sigma Ratio: 0.1
Minimum Strength: 0

Regardless of material labels, properties of blue-colored materials are set to bedrock (impenetrable) to force potential failure up into overlying materials.

Notes:
1). Dissipation of Excess Pore Pressure in YBM under dike & OBA = 75%
2). MSW shear/normal stress strength function from Zekkos, et. al., 2007.



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