APPENDIX 4

STABILITY ANALYSES – WASTE MASS

1. WASTE MASS MODEL

The site will receive inert waste as part of the deposit for recovery activity within the western extension area.

The waste associated with the deposit for recovery activity in the western excavation area will be placed in layers *c.* 1m thick in lifts *c.* 5m thick. The maximum total thickness of waste will be *c.* 15m. Active advancing slopes in waste material will be formed no steeper than 1v : 2h. Temporary inter-phase slopes in waste material will be formed no steeper than 1v : 3h. An intermediate bench with a minimum width of 10m will be maintained between lifts. The final restoration surface of the waste mass will be formed at gradients shallower than *c.* 1v : 25h.

No daily cover material will be placed.

2. SLOPE STABILITY – WASTE MASS

- **Aim**

  To assess the potential for instability of the waste mass.

- **Analytical approach**

  Use of SLIDE computer software to investigate the potential for slope failure.

- **Slope geometry**

  See Analysis C.

- **Analysis input parameters**

  - Shear strength and bulk density parameters

Material Type	**Drained Shear Strength [c' (kPA)]**	**Angle of Shearing Resistance (°)**	**Bulk Density (Mg/m^3)**
Artificial Geological Barrier (AGB)	4	23	1.8
Waste Mass	4	23	1.8
Groundwater	Quarry Floor Level		
Leachate	None		

- **Results (Analysis C)**

  Advancing waste slope

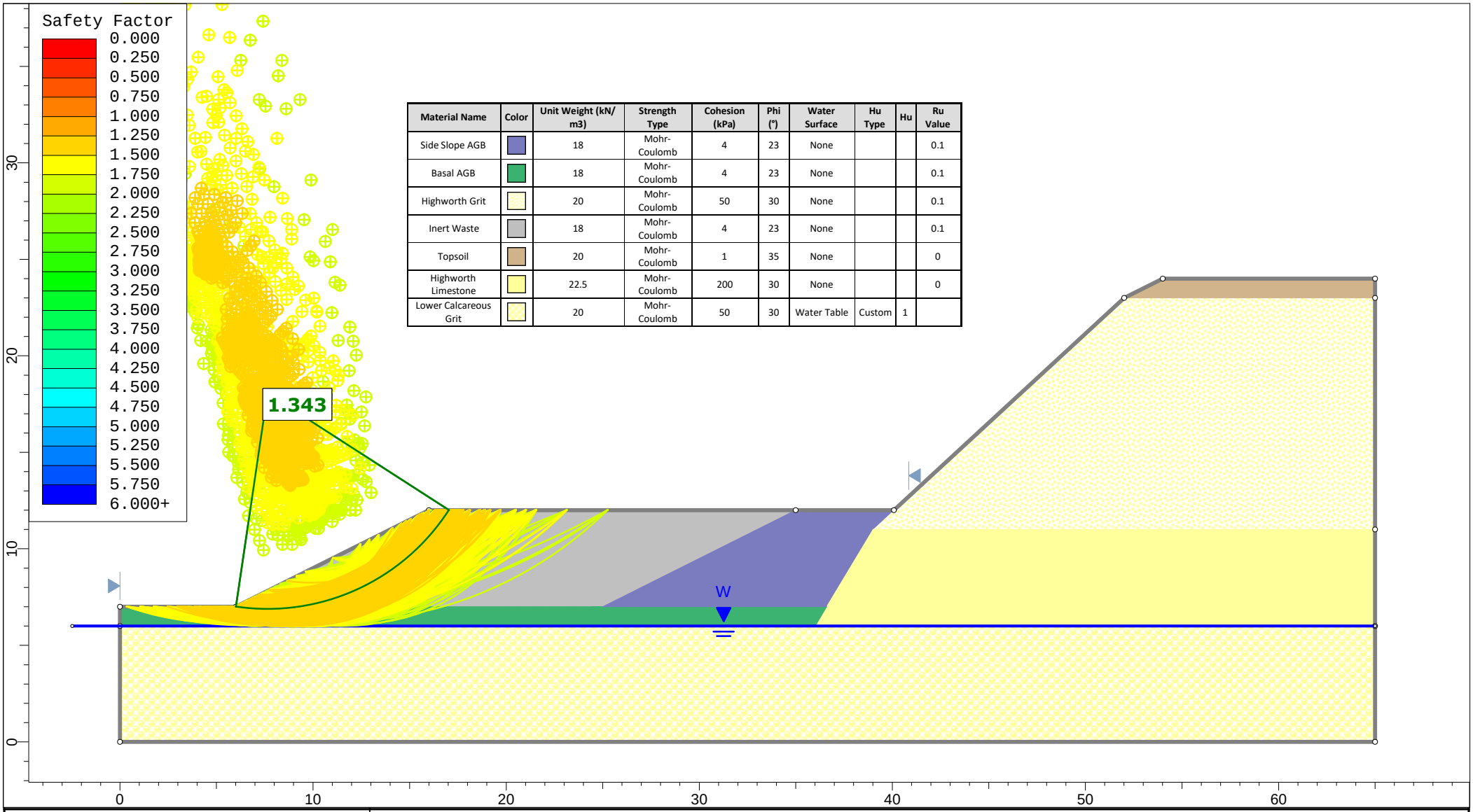
  Using the input parameters detailed above, a minimum FoS value of 1.34 is indicated by the analysis results for a circular failure involving an advancing waste slope.

  Temporary inter-phase waste slope

  Temporary inter-phase slopes in waste material will be formed at a shallower gradient than active advancing waste slopes. FoS values for circular slope failure involving the waste mass will be higher for temporary inter-phase waste slopes than for advancing waste slopes.

3. CONCLUSIONS

The calculated FoS value of 1.34 for an advancing waste slope is considered satisfactory. Accordingly, it is considered that the stability and integrity of an advancing or temporary inter-phase waste slope will not be compromised by slope instability.



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Side Slope AGB		18	Mohr-Coulomb	4	23	None			0.1
Basal AGB		18	Mohr-Coulomb	4	23	None			0.1
Highworth Grit		20	Mohr-Coulomb	50	30	None			0.1
Inert Waste		18	Mohr-Coulomb	4	23	None			0.1
Topsoil		20	Mohr-Coulomb	1	35	None			0
Highworth Limestone		22.5	Mohr-Coulomb	200	30	None			0
Lower Calcareous Grit		20	Mohr-Coulomb	50	30	Water Table	Custom	1	

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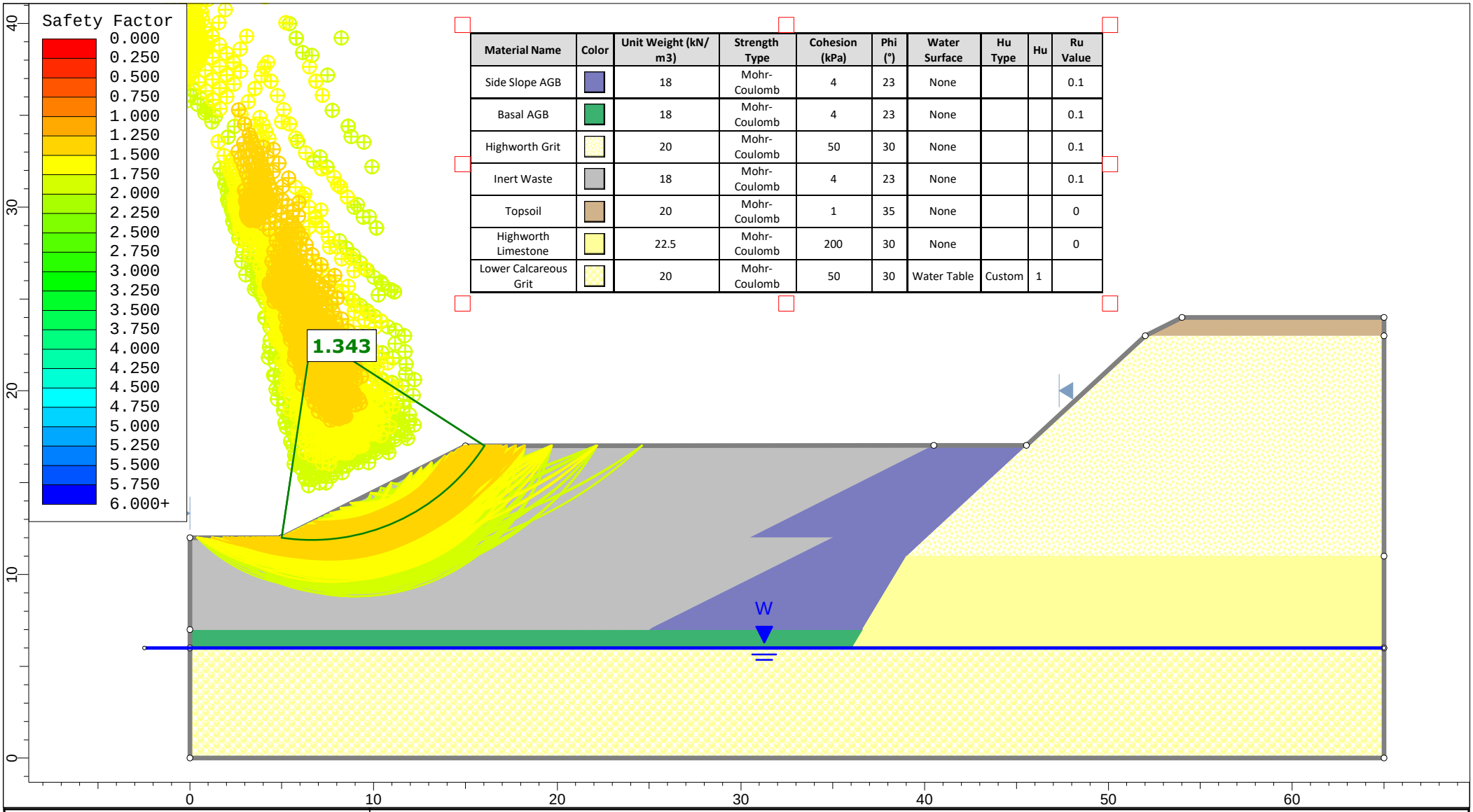
SLIDEINTERPRET 9.038

Project	Shellingford Quarry - Stability Risk Assessment		
Group	Waste Mass Stability - Analysis C	*Scenario*	Master Scenario
Drawn By	GWP Consultants LLP	*Company*	Multi-Agg Limited
Date	25/09/2025, 16:19:56	*File Name*	Shellingford Quarry SRA 2025.slmd



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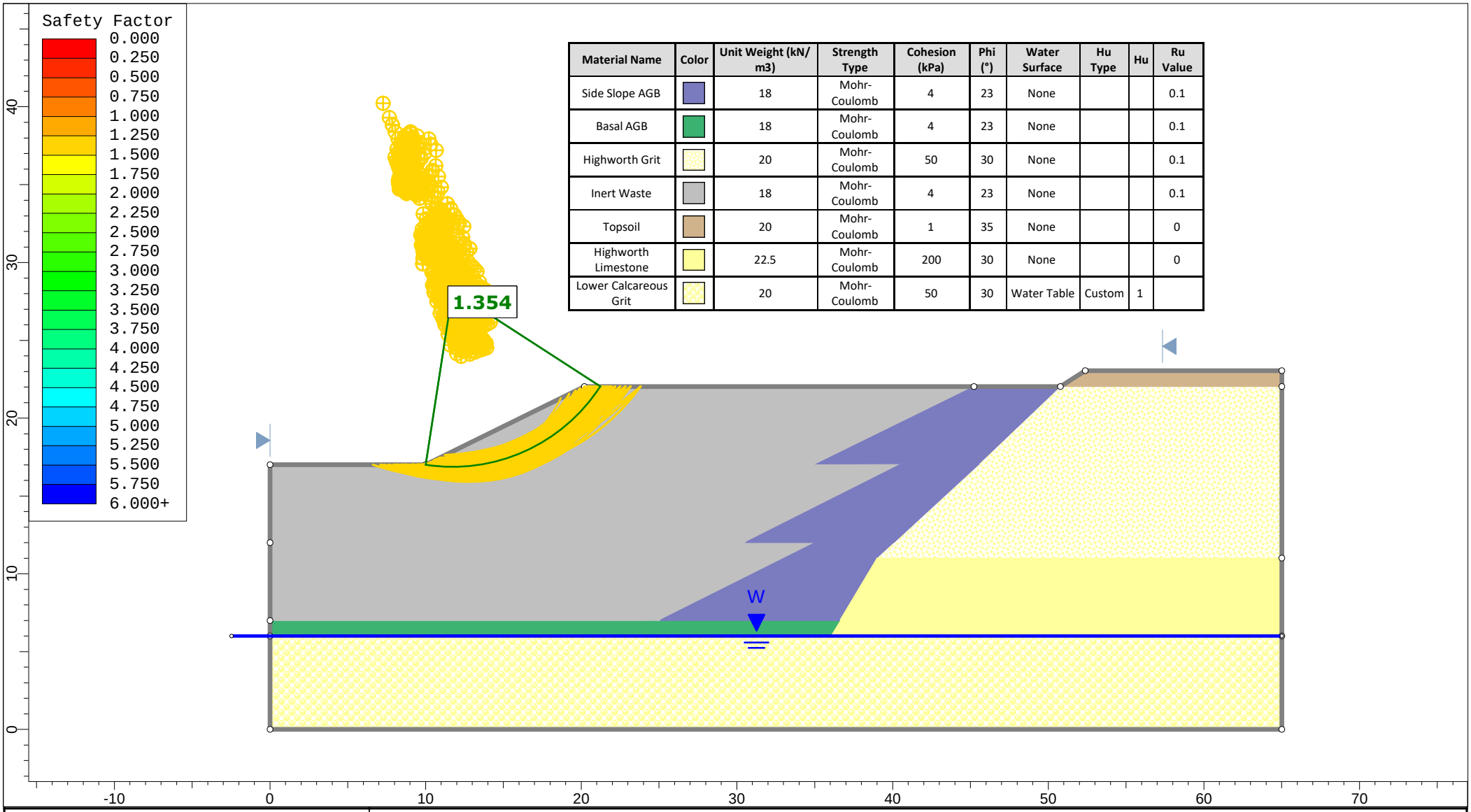
Project	Shellingford Quarry - Stability Risk Assessment		
Group	Waste Mass Stability Layer 2 - Analysis C	*Scenario*	Master Scenario
Drawn By	GWP Consultants LLP	*Company*	Multi-Agg Limited
Date	25/09/2025, 16:19:56	*File Name*	Shellingford Quarry SRA 2025.slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
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Project	Shellingford Quarry - Stability Risk Assessment		
Group	Waste Mass Stability Layer 3 - Analysis C	*Scenario*	Master Scenario
Drawn By	GWP Consultants LLP	*Company*	Multi-Agg Limited
Date	25/09/2025, 16:19:56	*File Name*	Shellingford Quarry SRA 2025.slmd