

RAPID | INTUITIVE | EFFICIENT

MINESCAPE 2023 UPDATE 3 RELEASE NOTES

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Removed	

What's New

Discover the latest enhancements and additions introduced in MineScape Update 3.

IMPORTANT: Before installing MineScape 2023 Update 3, users **must** update the System Service to the latest version through the <u>Distribution Portal</u>. This update is required to ensure a smooth installation process and optimal performance of the MineScape software. Attempting to install MineScape without first updating the System Service will result in installation issues.

Watershed Analysis

The new **Watershed Analysis** App allows users to visualise water flow from existing terrain data. It includes an integrated **Mesh Smoothing** feature to enhance the clarity of flow direction arrows and an **Elevation Heatmap** to display height differences in the terrain, helping users quickly understand the landscape's shape and slopes.

This feature comes as a standalone app within the **Surface Engineering** Product. Once loaded, it can be accessed through either the **Watershed Analysis** App or the **Open Cut** App.



Watershed Layers and Textures

New Send Query System

Users can now directly send queries from MineScape via the new **Send Query** Button, accessible within the **Help** Tab. This update provides a form for users to write their issues, suggestions, or feedback and send it to our support team. This enhancement streamlines the support process, making it easier and faster for users to communicate with our team without having to exit MineScape.

The form also allows users to attach files up to 5 MB in size. Supported file types are:

- ASCII: .ASC, .DAT, .CSV, and .TXT
- Video: .MP4, .AVI, .MOV, .WMV, .FLV, .MKV
- Image: JPG, .JPEG, .PNG, .BMP

NOTE: Internet connectivity is required to use this functionality.

File Home Design View Slicing Analy System Graphics Save All Support Support Support Sicing Analy Send Query Quick T	vse Mesh Grids Plotting Transform Help Notkeys Release Check for Rollback Screen Recorder Capture Columnation Ools Update Media Help Information
	Send Query × MineScape Complete the details below and click Send Query to send to our Datamine Team.
	Your Email Your Query Please provide sufficient detail to describe your query or comment so it can be effectively handled. Description:
	Attach Send Query

New Send Query Form

CAD

Support for Deswik Import

Users can import Deswik files to MineScape. Files can be imported as either design data or mesh. For design data (.dgn), only lines, polygons and colours are currently supported.



New Deswik Import Option as Design Data

File Home Design View Slicing	Analyse Mesh Grids
Q Open Import Export Validate & File	ion Colour Clight Model - Graphics
🤮 Mesh Import	? k ? 🖵 🗕 🗆 🗙
File Type File Type ASC MineScape Mesh ASCII TFL MineScape Triangulation TRIALA MineScape Triangle Spec GRD MineScape Grid 00T Maptek Vulcan DM Datamine Studio DUF Deswik DUF/DCF/VDCL DWG AutoCAD DWG DXF AutoCAD DXF FBX AutoCadesk Filmbox GLB GL Transmission Format GLTF GL Transmission Format GLTF GL Transmission Format OBJ Alias Wavefront Object PLY Stanford Triangle Format STL Stereolithography TS GoCAD Triangulated Surface	Deswik DUF/DCF/VDCL Input Filename Browse Output Mesh Group Name Output Output Display after Import
 ■ ■ -	Ok Apply Cancel

New Deswik Import Option as Mesh

× †† - 🌣

Improved Statistics Dock

Users can now view the total area and total length in the **Statistics** Dock of all selected elements in the **CAD** Window after clicking **Run**. Previously, this information was only available for single-element selections. The **Area** calculation applies only to *POLYGON* and *DESIGNPOLYGON* element types, as lines do not have an "inside area." Additionally, the **Area View** value updates after rotating elements and clicking **Run** again.

NOTE: Currently only elements with **LINES**, **DESIGNLINE**, **POLYGON**, and **DESIGNPOLYGON** types are supported.



Total Area and Total Length Information of All Selected Elements

Nomenclature Change in RapidCAD

Changed the option texts in the confirmation dialog box that appears after clicking the **Extend to Intersection** Option in **RapidCAD**.



Updated Option Texts

New Validation for Removing Self-Intersection

Added a confirmation message for the **Remove Self-Intersection** Option, accessible in the **Design** Tab under the **Repair Data** Dropdown Menu, that appears when users select line elements with start and end vertices that overlap too closely. If the minimum segment length of the resulting elements is less than 0.0001, the confirmation message below will appear. This prevents confusion where lines with overlapping vertices might be mistaken for polygons.



A Confirmation Message for Self-Intersection Option

Added Multi-Line Expression Capability

Users can now input multi-line expressions directly into the **Surface** Form when creating or updating an expression surface, eliminating the legacy requirement of linking the expression to an MXL file.

The Surface Form is accessible by navigating to Definitions » Surfaces »

Expression in the MineScape in the MineScape **Explorer**.

Surfac	e Name	Test V V
Schem	na Name	Test ~
	Expressi	on
1	IF "<"a"	>"1) THEN
2	a_floor	
3	ELSEIF "	'<"b">"1) THEN
4	h floor	
	0_11001	
5	ELSE	
5	ELSE	ISS (a_floor, b_floor, MIN (c_floor, d_floor), ~ topo)
5 6 7	ELSE NONMI ENDIF	SS (a_floor, b_floor, MIN (c_floor, d_floor), \sim topo)
> 5 > 6 > 7 ⊕	ELSE NONMI ENDIF	SS (a_floor, b_floor, MIN (c_floor, d_floor), ~ topo)

Surface Form with a Multi-Line Expression

Improved Surface Inspector Feature

Users can now obtain elevation values of one or multiple surfaces simultaneously, without having to load the surfaces on the **CAD** Window. The **Surface Inspector** Option is accessible from the **Analyse** Tab of the **CAD** App.



Surface Inspector Option

There are two types of modes – **Dynamic** and **Manual**.

The **Dynamic** Mode allows users to hover the cursor anywhere on the **CAD** Window and the **Display Surface** Form will display the elevation values in realtime.

•	🚦 Display Surfa	ce	?	₹?	₽	-		×
	✓ Dynamic							
	X 651518.290	Y						
	Surface		Value					
	LOX C_FLOOR P_ROOF		140.868 99.872 91.629					
						Car	cel	

Display Surface Form in Dynamic Mode

The **Manual** Mode allows users to input specific coordinates (X and Y values) and the **Display Surface** Form will display the elevation values of the specified coordinates.

∺ Display Surfac	e	?	₹?	₽	-		×
Dynamic							
X 649518.300	Y 7405104.200	Ø	\searrow				
Surface		Value					
C_FLOOR P_ROOF LOX		-19.386 -36.920 151.650	•				
					Car	ncel	

Display Surface Form in Manual Mode

Other CAD Enhancements

• Added the **ESRI Shape File** as an import option when right-clicking on a design file and selecting **Import From** Option.

• Added the **Connect intersected segments** Checkbox in the **Segments** Group of the **Design** Tab. When ticked, MineScape merges two segments into one after they intersect.



Connect intersected segments checkbox

• Added the grade switcher in the **Measure Dock** that is similar to the one in the **Statistics** Dock.

Mesh

Mesh Smoothing

Users can now improve mesh surfaces by reducing irregularities and noise, such as those from LiDAR scanners, with the new **Mesh Smoothing** Option. This tool enhances visual clarity in applications like watershed analysis by refining elements like flow direction arrows. Users can either generate a new mesh as the output or override an existing one.

NOTE: Keep in mind that this feature will copy the mesh texture and metadata into the output mesh, but it will not retain point colours.

To access this option, go to the **Mesh** Tab in the **CAD** App. Locate the **Graphics** Group and select **Smooth**.



Mesh Smoothing

Expanded Element Type Support in the Relimit Function

Users can now use any element type from the polygon class as a boundary polygon, expanding beyond polygon-type elements. This update applies to the Relimit Boundary Section in the Create Surface Form and the Relimit Section in the Create Mesh by Polygons Form. Both forms are accessible under the Surface Mesh Group within the Mesh Tab, which is available in both the CAD Ribbon and the Point Cloud Tools Ribbon.



Surface Mesh Group within the Mesh Tab

Added "New Definition" Option

A **New Definition** Option has been added when right-clicking a mesh file under the Mesh Node in the Explorer Dock. This opens the Mesh Surface Definition Form, which is the same form accessed from the **Definition** >> **Surfaces** Node, but with the Mesh Group and Mesh File fields pre-populated. Once created, the

new Mesh Surface Definition will be stored under **Definition** >> **Surfaces** >> **Mesh** in the **Explorer** Dock.



Mesh Surface Definition Form

Improved the Mesh from Point Cloud Feature

Added a **Create Mesh Surface Definition** Checkbox to the **Create Mesh from Point Cloud** Form to simplify the mesh creation process. Users can now create mesh surface definitions directly from the form, while the option to manually create them through the MineScape **Explorer** remains available.

🦌 Create Mesh fro	m Point Cloud	?	\ ?	Ţ	_		X
Output							
Mesh Group		~					
Name		~					
🗌 Use Boundary L	ines						
Enable Colours							
Create Mesh Su	rface Definition						
Display Definition	on		6) ~ (
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Improved mesh from point cloud feature

Reserves

Run underground reserves from Across MineScape Apps

Starting from this update, **UG Multi-Mesh** is added as a sample source in the **Run Reserves**, **Model Resource**, and **Multipart Reserves** Forms. This way, users can calculate reserves and volumes for underground mining blocks from across all MineScape applications.

This form can be accessed from:

- Open Cut > Reserves > Engineering > Run Reserves/Multipart Reserves
- Open Cut > Reserves > Geology > Model Resource
- UG Coal > Reserves > Run Reserves/Multipart Reserves
- Stratmodel > Reserves > Engineering > Run Reserves/Multipart Reserves
- Stratmodel > Reserves > Geology > Model Resource

Model Resource Settings - Settings - Internals - Qualities	Setup Peserver Sample Source Source UG Multi-Mesh ~ Schema Name ~ Quality Model ~ Input Mesh Mesh File ~ Output Table File ~	2 Model Type Exclusions		Run Reserves Reserves Re	Setup Reserves Sample Source Us M Schema Name Quality Model Input Mesh Mesh File Output Table File	Source	✓ Model Type v v Exclusions v
■ ■ •	1	Ok Apply	Cancel	⊒			Ok Apply Cancel
	Model Kesource Form	Multipart Reserves	Setup Reserves Sample Source Source UG Multi-Meth Schema Quality Model Input Mesh Meth Group Mesh File Output Table File	v Model	2 k ²		leserves rolm

Multipart Reserves

Geology

Nomenclature Change in GDB's 2D and 3D Graphics Forms

Changed the **CAD Apply** Button to **Apply** in the **Drill Hole 2D Graphics** and **Drill Graphics** Forms. The **CAD Apply** previously stowed the form, whereas the updated button will no longer stow the form.

Added the Statistics Tab in the Interval Summary Report

Accessible through the **Reports** Tab of the **GDB** App, users can generate the **Interval Summary Report** via the **Logs** Option. Upon generation, there will be a new addition of a second **Statistics** Tab in the output spreadsheet file.

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	Project:	UMINA	Title:		
Interva	al Name	Occurrences	Min Thick (Metres)	Max Thick (Metres)	Mean Thick (Metres)
BOW		132	0.00	0.00	0.00
UPP_A		28	0.57	2.90	1.73
UPP_B		9	0.01	0.10	0.05
MID_A		95	0.30	4.20	1.92
MID_B		97	0.02	4.53	2.81
TUFM		66	0.01	0.64	0.23
LOW_A		33	0.01	0.31	0.10
LOW		81	0.07	3.70	1.77
LOW_B		35	0.03	1.80	1.35
тов		50	0.00	0.00	0.00
BA		44	0.48	11.39	3.65
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Statistics Tab of the Interval Summary Report

Basic Interval Data Retrieval

Added the **Basic Interval Data Retrieval** Option, which allows users to retrieve drillhole and interval data from the database and put it in a table file. The **Basic Interval Data Retrieval** Form can be accessed through the **Reports** Tab of the **GDB** App.

Input/Output Retrieval Items				
Table File	ppend			
Hole Selection Records Selection				
Value Selection Options				
○ Using Template	Selected Values			
O Using ASCII File	Selection Set			
Using Patterns				
Value Patterns				
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Input/Output Tab of the Basic Interval Data Retrieval Form

Basic Interval Data Retrieval	? № 🖵 — 🗆 >
Input/Output Retrieval Items	
Drill Hole and Interval Columns Image: Hole Collar Elevation Hole Total Depth Interval Thickness Interval Bottom Elevation Interval Top Elevation Interval Accumulation and Min/Max	 ✓ Distance Between Interval Groups Upper Interval Group ○ Base of Group Upper Intervals
	Lower Intervals
≅ ₽ -	Ok Apply Cancel

Retrieval Items Tab of the Basic Interval Data Retrieval Form

Lithological Data Retrieval

Added the **Lithological Data Retrieval** Option, which allows users to generate an output table file containing geometrical and lithological information of the geological environment. The **Lithological Data Retrieval** Form can be accessed through the **Reports** Tab of the **GDB** App.

Table Colu	e File			
	mn Name		✓ Append	Using a top limit of the collar elevation and a bottom limit of the total depth of the drill hole, report the tot thickness of acceptable intervals
Hole !	Selection	Records Selection		
- Value	e Selection (ptions		
01	Using Templa	te	Selected Values	
01	Using ASCII I	île	Selection Set	
• u	Using Patter	IS	_	
1	V	lue Patterns		
	Ŷ			

Input/Output Tab of the Lithological Data Retrieval Form

Top Limit	Bottom Limit	Retrieval Items					
			Search	for Lithologies			
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cription			÷	~		Descriptions	
he collar elev	vation				ф		~
	h Top	h Top Centre I	h Top Centre Bottom Top Centre Bottom Top Centre Centre Content Top Centre Top Centre Top Centre Con				

Top Limit Tab of the Lithological Data Retrieval Form

	Top Limit Bottom Limit	Retrieval Items					
Bottom Limit -			Search	for Lithologies			
○ Elevation			Locate		~		
○ Surface	$\sim \mathbf{Y}$		Min Thick	Max Thick			
○ Collar			- Positive	Attributes			
O Total Depti	'n			Lithology Type		-	
 Intervals 	● Top ○ Centre ○ Botto	om		Lithology type			
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Bottom Limit Tab of the Lithological Data Retrieval Form

	Bottom Limit Re	trieval items				
Retrieval Between Top and E	Bottom Limits		Lithology Match	h		
Top Depth Lit	thology Selection —		Min Thick	Max Thick		
O Base Depth	Highest		Inten	vals		
O Top Elevation	U Lowest		Φ.	~		
O Base Elevation						
Accum Thickness			6			
O Distance		\sim	Positive Attrib	outes		
Retrieval Description			Liti	hology Type	~	
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on top ann.				4	•	~
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un op anne.			- Negative Attr	ibutes	×	~
on op wine			Negative Attr	ibutes	v Descriptions	~
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un op min			- Negative Attr Litt ⊕	ibutes v	> Descriptions	~
			- Negative Attr Litt ⊕	ibutes v	> Descriptions	~

Retrieval Items Tab of the Lithological Data Retrieval Form

Scheduling

Limit Output Lines

The **Limit Output Lines** Field has been added to the **Generate by Progress** and **Generate by Periods** Forms allowing users to apply the limit output lines only to the scheduled blocks.



Generate by Progress Form

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Generate by Period Form

Surface Engineering

Improved Rapid Slicer for More Usability

MineScape's **Rapid Slicer** Tool has been improved in the following ways:

- Added the **Apply** Button in the **Settings** Dialog Box so that users can now apply a new angle to all slicer lines simultaneously, regardless if they are horizontal or vertical
- Effortlessly adjust the rotation angle by entering the exact degree in the **Rapid Slicer Toolbox**, providing an alternative to the **Rotation Handle**



Rapid Slicer Toolbox Now Features Effortlessly Adjustable Rotation

This enhancement also accommodates decimal values, offering a customisable decimal place setting.



Rotation Supports Adjustable Decimal Places

Pit Optimization Pro

The **Pit Optimization Pro** App has been enhanced in the following ways:

Added Automatic Price Calculation

Pit Optimization Pro - Edit (recmass_opt)							?	k ² ⊑	- -	
Prit Optimization Setup Prameters Parameters Classification Run All Parameters Parameters Portinization Parameters Poptimization Parameters Paramameters Parameters Paramameters Parameters Para	Price Price Fact Minimu Iteration Roundin Resource	m [m]	0.50 1.50 3 2 View Selection Expression inpolygon("optimizatio	Process Recovery 100	Reference Price 60	Price per Iteration 30.00; 60.00; 90.00				
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						Clear	Save		Car	ncel

Pit Opt Pro now supports automatic Price Per Iteration

Pit Optimization Pro now automatically calculates the **Price per Iteration** based on enhanced attributes such as **Price Factor**, **Iterations**, **Rounding Factor**, and **Reference Price** to replace **Lower** and **Upper Prices**, ensuring a hassle-free and efficient pit optimization experience.

Prie	ce							Price					
E!	🔴 Basic -							Price Fa	ctor				
Г	Lower Price	ce 30	lonne					Minim	um	0.50			
	Upper Pric	oper Price 35 Tonne						Maxin	um	1.50			
	Recovery	Recovery 95 %					\rightarrow	Iterati	ons	3			
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5	A data and								[View			
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	Resource	Price Categories						Resource	e Price Categ	ories			
		Category	Selection Expressions	Lower Price (Tonne)	Upper Price (Tonne)	Recovery			Category	Selection Expression	Process Recovery	Reference Price	Price per Iteration
	> 1	All	inpolygon('optimization', 3798,	30	90	100		>1	All	inpolygon('optimizatio	100	60	30.00; 60.00; 90.00
	φ							Φ					

Enhanced Attributes on Price

NOTE: The new price factor calculation is only applicable starting from MineScape 2023 Update 3.

Added Excel File for Price per Iteration

Effortlessly run price simulations for each iteration with the provided Excel file. Users can easily adjust **Minimum** and **Maximum Price Factors**, set the number of **Iterations**, and input the **Reference Price** to see dynamic pricing for each iteration.

Pit Optimization Pro - Edit (recmass_opt)		? ¥₽ – □ ×
Pit Optimization Setup Setup Reserves Schema Parameters Intervals/Quality Classification Run Reserves Optimization Parameters Porometers Porometers Costing Run Optimization Run All	Price Factor Minimum 0.50 Maximum 1.50 Iterations 3 Rounding Factor 2 View Resource Price Categories Category Selection Expression Process Recovery Reference Price Price per Iteration 1 All inpolygon('optimizatio 100 60 30.00; 60.00; 90.00	
recmass_opt_res table has been loaded.	If only one Category entry is provided, the Optimization process does not require either Category Name or Se If multiple Category entries are provided, the Selection Expression must be filled in for each entry.	lection Expression.
ı	View Button	Save Cancel

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122 ▼ : X √ =iF(AND()\$8<>**,\$C22<	≻```),J
A B C D E 1	
1 The factor	
Price Factor 4 Maximum 1.50	
3 Minimum 0.50 5 Iterations 20	
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8 Reference Price	
Categories All	
Reference Price 60.00 11	
Rice Inscement 20.00 Iterations Price Factor	
14 2 1.03	
Iterations Price Factor Pricing 15 3 1.05	
ALL 16 4 1.08	
1 0.50 30.00 17 5 1.11	
2 1.00 60.00 18 6 1.13	
3 1.50 90.00	
20 8 1.18	
22 10 1.74	
23 11 1.26	
24 12 1.29	
25 13 1.32	
26 14 1.34	
27 15 1.37	
28 16 1.39	
3 29 17 1.42	
51 15 1.47	

Calculate Price Simulation with the provided Excel File

Added Mining Recovery Expression

Interva	als/Q	uality						ntervals/0	Quality					
Inter	rvals			Qualiti	es			Intervals				Qualities		
		Reserve Intervals	Selection Expressions		Qualities				Reserve Intervals	Selection Expressions	Mining Recovery % Expression		Qualities	
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2.4	4	503 V		> 4	rd	~	-	> 4	S03	~	95	► 4	rd	~
	5	503L ~		> 5	tm	~		> 5	S03L	~	95	5	tm	~
> 4	6	504 V		> 6	ts	~		▶ 6	S04	~	95	6	ts	~
	7	S05 V		φ		~		▶ 7	S05	~	95	Φ		~
> 1	8	S06 ~						> 8	S06	~	95			
Φ		~						0		~				

Interval/Quality has been enhanced with Mining Recovery % Expression

Pit Optimization Pro has been enhanced with **Mining Recovery Expression** to calculate resource loss, which is considered a burden instead of a mining cost for accurate calculation, ensuring precise recoverable resources and revenue estimation.

		COAL_TOTEDVOLUN	TOTBURDVOLUME	TOTBURDMASS	BLOCK_COMPCT	BLOCK, REVENUE	BLOCK_MCOST	BLOCK_PCOST	BLOCK_NET_WALUE	BLOCK_TONINAGE	BLOCK_MGAF	BLOCK_PCAF	BLOCK, ROCKTYPE	PITOPT_PHASE	REVENUE	MINING_COST	PROCESSING_COST	PARCEL_TONNAGE	PARCEL_NET_VALUE
135472		1,000.00	1,000.00	2,300.00	0.03	0.00	11,500.00	0.00	-11,500.00	2,300.00	5.0	0	00 WASTE		0.00	-11,500.00	0.00	2,300.00	-11,500.00
135473		1,000.00	1,000.00	2,300.00	0.03	0.00	11,500.00	0.00	-11,520.00	2,303.00	5.0	0	00 WASTE		0.00	-11,500.00	0.00	2,300.00	-11,500.00
135474	0.50	745.62	745.62	1,714.92	0.16	29,601.71	9,561.32	657.82	19,382.57	2,043.83	4.6	3 0	RESOURCE		29,601.71	-9,561.32	-657.82	2,043.83	19,382.57
135475	0.90	0.00	0.00	0.00	1.00	116,366.37	3,878.88	2,585.92	109,901.57	1,292.96	3.0	2	00 RESOURCE		116,366.37	-3,878.88	-2,585.92	1,292.96	109,901.56
135476	0.50	865.03	865.03	1,969.56	0.08	15,706.38	10,471.34	349.03	4,886.02	2,164.07	4.8	1 0	16 RESOURCE		1 15,706.38	-10,471.34	-349.03	2,164.07	4,886.02
135472	0.75	419.45	419.45	964.73	0.44	67,911.34	7,087.35	1,509.14	59,314.85	1,719.30	4.1	2 0	RESOURCE		1 67,911.34	-7,087.35	-1,509.14	1,719.30	59,314.85
									Mining Re	covery and F	rocess Reco	overy 100%							
		COAL_TOTEDVOLUN	TOTEURDVOLUME	TOTBURDMASS	BLOCK_COALPCT	BLOCK_REVENUE	BLOCK_MCOST	BLOCK_PCOST	BLOCK_NET_VALUE	BLOCK_TONNAGE	BLOCK_MCAF	BLOCK_PCAF	BLOCK_ROCKTYPE	PITOPT_PHASE	REVENUE	MINING_COST	PROCESSING_COST	PARCEL_TONNAGE	PARCEL_NET_VALUE
135471		1,000.00	1,000.00	2,300.00	0.00	0.00	11,500.00	0.00	-11,500.00	2,300.03	5.0		00 WASTE		0.00	-11,500.00	0.00	2,300.00	-11,500.00
135477		1,000.00	1,000.00	2,300.00	0.00	0.00	11,500.00	0.00	-11.500.00	2,300.03	5.0		00 WASTE		0.00	-11,500.00	0.00	2.300.00	-11,500.00
135472		1,000.00	1,000.00	2,300.00	0.00	0.00	11,500.00	0.00	-11,500.00	2,300.03	5.0	0 0.	00 WASTE			-11,500.00	0.00	2,300.00	-11,500.00
135474	0.50	745.62	745.62	1,714.92	0.15	28,121.63	9,594.21	624.93	17,902,49	2,043.83	4.8	9 0.	RESOURCE		28,121.62	-9.594.21	-624.92	2,043.83	17,902.49
135475	0.50	0.00	0.00	0.00	0.95	110,548.05	4,008.17	2,456.62	104,083.25	1,292.95	3.9	1.	0 RESOURCE		1 110,548.05	-4.008.17	-2,456.62	1,292.96	104,083.25
13547(0.50	865.03	865.03	1,989.55	0.08	14,921.06	10,488.79	331.58	4.100.70	2,164.07	4.8	5 0.	15 RESOURCE		14,921.06	-10,488.79	-331.58	2.164.07	4,100.70
									Mining Re	covery 95%	& Process R	ecovery 100	%						
		COAL_TOTEOVOLUN	TOTEURDVOLUME	TOTBURDMAGS	BLOCK_COALPCT	BLOCK_REVENUE	BLOCK_MCOST	BLOCK_PCOST	BLOCK_NET_VALUE	BLOCK_TONINAGE	BLOCK_MCAF	BLOCK_PCAF	BLOCK_ROCKTYPE	PITOPT_PHASE	REVENUE	MINING_COST	PROCESSING_COST	PARCEL_TONNAGE	PARCEL_NET_VALUE
135471		1,000.00	1,000.00	2,300.00	0.00	0.00	11,500.00	0.00	-11,500.00	2,300.00	5.0	0 0	00 WASTE		0.00	-11,500.00	0.00	2,300.00	-11,500.00
135472		1,000.00	1,000.00	2,300.00	0.00	0.00	11,500.00	0.00	-11,500.00	2,300.00	5.0	0 0	00 WASTE		0 0.00	-11,500.00	0.00	2,300.00	-11,500.00
135472		1,000.00	1,000.00	2,300.00	E.00	0.00	11,500.00	0.00	-11,500.00	2,300.00	5.0	0 0	00 WASTE		0 0.00	-11,500.00	0.00	2,300.00	-11,500.00
135474	0.50	745.62	745.62	1,714.92	0.15	28,121.63	9,594.21	624.93	17,902.49	2,043.83	4.6	9 0	31 RESOURCE		2 25,309.46	-9,994.21	-624.92	2,043.8	15,090.32
135475	0.50	0.00	0.00	0.00	0.95	110,548.05	4,008.17	2,456.62	104,083.25	1,292.96	3.1	0 1	90 RESOURCE		1 99,493,23	-4,038.17	-2,456.62	1,292.96	93,028.44
135476	0.50	865.03	865.03	1,989.56	0.08	14,921.06	10,488.79	331.58	4,100.70	2,164.07	4.8	s o	15 RESOURCE		1 13,428.96	-10,488.79	-331.58	2.164.07	2,608.59
									Mining Re	covery 95%	& Process R	ecovery 90%							

Revenue Comparison

Added Classification in Reserves

A new **Classification** Node has been added to the **Pit Optimization Pro** Form so that users can incorporate resource classification into the pit optimization process.

Pit Optimization Pro - Edit (recmass_opt)					?	▶? 🖵 – □ ×
 Pit Optimization Pro - Edit (recmass_opt) Pit Optimization Setup Setup Setup Schema Parameters Intervals/Quality Classification Parameters Optimization Parameters Optimization Parameters Optimization Parameters Optimization Parameters Optimization Parameters Costing Run Optimization Run All 	Classification	Iassification	Lower Surface V V	¥ ¥	? Selection Expression	
recmass_opt_res table has been loaded.					Clear Sav	re Cancel

Classification is now available in the Pit Optimization Form

Nomenclature Change

Changed the name of **Recovery** (used to calculate the extractable volume of coal and overburden) to **Process Recovery**.

Underground Engineering

Revamped the Tabs in the UG Coal Ribbon

Reordered the tabs in the **UG Coal** Ribbon so now they are divided into **Longwall**, **Pillars**, **Entries, Reserves** and **Subsidence**. Most options in the old **UG Coal** Tab has been moved to different tabs.



UG Coal Ribbon - After

- The old **UG Coal** Tab has been renamed to **Longwall**
- Added Solid/Outline Option in both the Longwall and Pillars Tabs. It's helpful to toggle between displaying or hiding mining blocks outlines for better viewing of the bences, slices, and intervals. Similar functionality is found in the Mining Blocks App
- The Create UG Solids Form has been merged into the Longwall Layout Form, accessible by selecting Create in the Longwall Tab. This update provides a smoother workflow by enabling users to generate longwall layouts and UG mining blocks in one simple form.

🗧 Automatically Generate a Longwall Layout	? k ? 🖵 — 🗆 🗡				
Longwall Dimensions Road Names Display Definitions					
Submain Line String ID Start Longwall Offset 0.00					
Boundary Polygon ID 🗹 Extend Gate Roads					
Angle of Longwall 90.0000 or Bearing of Longwall					
MainGate Overdrive 0.00 Minimum Pillar Length					
Submain Name Gate Division 01 Subdivision Suffix		Create UG Solids		?	№ 🗆 – 🗆
Longwall Division 01 Subdivision Suffix Install Division 01 Subdivision Suffix		⊟ UG Solids	Surface		
- Longwall Dimensions		Surface	Roof Surface		
Width Length Gate Overdrive Barrier Width Pillar Wid	ith Chainage	- Longwalls	Schema	v	
Ф		Limit Area	Model Type	¥	
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Roadways V V Longwalls 01					
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Nodas v V					
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Before – Longwall and UG Mining Blocks Creation in Two Separate Forms

··· Setup	Model		
Model Naming	Schema Schema	 Model Type 	
Longwall	Design block	5	
Mains	Scenario		
Face Access	Scenario	v	
 Heading & Crosscut Names Generate 	Description M	aximum 256 characters	
····UG Mining Blocks			
··· Limit Area	Display Definition	s	
	Pillars		
	Centre-lines		
	Nodes	*	

After – Longwall and UG Mining Blocks Creation in One Form

 The Run Reserves Option (previously located in UG Coal » UG Solids » Run Reserves) is now removed. Users can calculate volumes and reserves for UG Mining Blocks by going to the Reserves Tab and select Run Reserves

Revamped the Form for Longwall Layout Creation

The **Automatically Generate a Longwall Layout** Form has been enhanced in the following ways:

- Ability for users to create scenario-based configuration. The UG scenario is saved as a .UGSCEN extension within the **Specs** Folder of the MineScape project.
- UG mining blocks generation now outputs pillar mesh
- Users can now choose to generate UG mining blocks from road or division layer
- When generating UG mining blocks from a division layer, the recovery rate is written to the metadata as **UGRECOVERY**, which is useful for scheduling at a later time. The recovery rate represents the mineable area, which is the

portion of polygon blocks not covered by pillars. For longwall areas, the recovery rate is always 100%.



UGRECOVERY Metadata

With this update, the recovery data will be taken into account when calculating underground reserves in the **Run Reserves** Form.

Generate Mining Blocks for Room and Pillar Method

Added the **Create** Option in the **Pillars** Tab to allow users generate UG mining blocks for the Room and Pillar method. This option is similar to the **UG Mining Blocks** section in the **Automatically Generate a Longwall Layout** Form

File	Longwall	Pillars	Entries	Reserves	Subsidence	Help						
UG Coal	Polygon Line to Fill Pillar	Networks	→ Join Pillars	Split Copy Pillars Division	Create Solid	/Outline	Calculate Recoveries					
		Pilla	nrs		UG Mining	Blocks	Extraction		2 1 ²			
	UG Mining Block	55	Se	tup Input Source Surface Schema Model Type Grid Spec Surface Grid Spec Grid Spec Surface								
-	□ ▼					[Ok	A	pply	Ca	ancel	

Create UG Mining Blocks Form for Room and Pillar Method

Plot Designer

Improvements to Page Setup and Layout Features

Plot Designer's user interface and page management features have been updated, streamlining access to page settings and improving paper size and margin adjustments.

 A new group called Page Setup is now available in the Plotting Tab, containing individual options that were previously managed within the Page Setup Form



Page Setup Group in Plotting Tab

- The option to change page orientation is now also accessible from the Plotting Tab. Previously it was only available in the Plot Designer Toolbar.
- The size of a **Paper** Window can now be updated. When the paper size changes, containers within the **Paper** Window may be resized and repositioned to maintain the layout as closely as possible. Previously, users had to create a new plot file with a new paper size.
- The **Restrict Data to Margins** Option now affects margin updates, whereas previously it only applied when creating a new viewport. When enabled, containers are automatically repositioned and may be resized to fit within the new margins.

Bug Fixes

System Services

• Fixed an issue where MineScape could not be installed due to outdated .NET Desktop Runtime version. MineScape System Services has now been updated to using .NET Desktop Runtime version 6.0.29.

Core

• Fixed an issue where MineScape notification pop-ups in a multi-monitor environment would appear on the other monitor instead of the monitor where the MineScape main window is located

CAD

- Fixed an issue in the **Height Cue** Form where selecting pastel colour palette would revert back to **CAD** colours
- Fixed an issue where **Surface Inspector** was unable to inspect mesh surfaces
- Fixed an issue where the the Height Cue colours were not properly applied on a multi-mesh after clicking **Apply**
- Fixed an issue where selecting only one colour on the **Height Cue** Form would cause the selection to become stuck, allowing the selection of three colours
- Fixed an issue where the selecting **Grade to Boundary** through **RapidCAD** would display the **Extend Interactive/Extend All** Confirmation Dialog Box
- Fixed performance issue when loading and unloading layers in CAD
- Fixed a display issue where several tooltips showed different texts than the actual button functions
- Fixed an issue where **Surface Inspector** couldn't be accessed from the History context menu from the **CAD** Window
- Fixed an issue where the Create Mesh and Filter Options in the Point
 Cloud Group of the Mesh Tab were disabled even though a point cloud file had been loaded onto the CAD Window
- Fixed an issue where **Surface Inspector** didn't mark invalid surfaces properly in the **Display Surface** Form
- Fixed an issue where compound surfaces weren't listed in the **Surface Inspector** Form

Mesh

• Fixed an error that occurred when trying to update a Digital Terrain Model (DTM) using an existing mesh

- Fixed an error where mesh couldn't be created using the **Create Mesh** from Layer Form because the **Mesh Group** Field was left blank
- Fixed an issue where creating a surface mesh using the Between Crest and Toe Option would not automatically refresh the output mesh if it was already loaded in the CAD Window. MineScape now detects if the output mesh is open and refreshes it accordingly.
- Fixed an issue where the **Create Mesh Surface Definition** Checkbox was disabled in the **Save Mesh** Form
- Fixed an issue where mesh definition wasn't created after restoring a form spec in the **Create Mesh by Polygons** Form
- Fixed an issue where users were unable to create a mesh using polygons due to manually inputted polygon IDs. The **Polygon ID** Column in the **Create Mesh by Polygons** Form is now set to read-only. Users must use the **Pick Polygons** Button or right-click and select **Pick** to input the polygon ID.
- Fixed an issue where users were unable to input design file and layer names in the **Create Mesh from Layer** Form
- Fixed an issue where mesh couldn't be created when using the Relimit All
 Delete Inside Option in the Create Mesh by Polygons Form
- Fixed an issue where the statistics data disappeared when the mesh was loaded from the **Display** Dock

Block Model

- Fixed an issue where the **Zone** Column for an interval didn't automatically get filled in when setting up a new block model
- Fixed an issue where an error message was displayed after clicking Information from the right-click menu on a block model file in the Explorer Node
- Fixed an issue where the Length Fields were not disabled after the Generate Extents Button was clicked in the Size & Orientation Form

• Fixed an issue where MineScape failed to generate surface grids through a block model due to a limitation of only 10 grid value inputs. MineScape can now handle up to 2000 inputs in a single process.

GDB

 Fixed an issue where selecting the Lithology Type Radio Button through Correlate > Insert/Replace Option showed interval names instead of lithology names

Stratmodel

- Fixed an issue where clicking the Adjust Button in the Edit a Drill Hole
 Form caused an Interval record to disappear due to an invalid sorting index
 when multiple Depth From values were similar. The sorting method has
 been updated to account for both Depth From and Depth To values.
- Fixed a performance issue that occurred when generating a section through a schema
- Fixed an issue in the Run Reserves Form where coal was not detected as resource in the result table when the Honour Triangles Checkbox in the Settings Node was ticked

Surface Engineering

- Fixed an issue where the **Rapid Slicer** box could be hidden and show vertices
- Fixed an issue where the node label still said **Bench Blocks** in the **Explorer** Node instead of **Mining Blocks**
- Fixed an issue where the Projection module failed due to incorrect strip naming when switching between 9 and 10 characters. The naming is now properly assigned, and the layer opens correctly after projection.
- Fixed an issue where the **Rapid Slicer** grid wasn't displayed after performing dynamic slicing on a single-bench mining block

- Fixed an issue where the **Rapid Slicer** Tool couldn't slice a mining block with top and bottom surfaces
- Fixed an issue where slicing multi-bench mining blocks with **Rapid Slicer** resulted in incorrect strip name assignment
- Fixed an issue where MineScape displayed incorrect error message because the polygon layer name was missing
- Fixed an error that occurred when generating a dump mesh
- Fixed an issue in the **Mining Blocks to DTM** Form where the **Mesh Name** Dropdown list didn't show any mesh block names based on the selected scenario
- Fixed an issue where the routput engineering solid meshes were truncated because the input data was trimmed incorrectly
- Fixed an error that occurred when trying to perform the **Do Strip** operation in the **Dragline** Application
- Fixed an issue where selecting the Project Down Radio Button in the Generate Solids Form resulted in incorrect projection

Scheduling

- Fixed an issue where the sequence number and the associated block metadata were not automatically removed from the scheduling database when deleting multiple sequences
- Fixed an issue where pit face positions couldn't be generated by progress
- Fixed an issue where the controls of the Constraints, Mine Map and Activity Map Windows were hidden behind the CAD Window
- Fixed an issue where a blank error message appeared after picking a block for a sequence that contained a schedule constraint
- Fixed an issue where incorrect results were generated by the Generate by Periods Form due to the pit mesh not being loaded beforehand and the metadata not being immediately queried from the mesh server

- Fixed an issue where activating a sequence before the mesh file was loaded in the **CAD** Window would result in digger appearing in an incorrect position
- Fixed an issue where mesh numbers were still shown on a bench that was not set to **Active** in the **Active Bench** Option when running animation
- Fixed an issue where unloading the mesh file from the **CAD** Window didn't automatically remove the digger from the **CAD** Window
- Fixed an issue where reordering sequence numbers did not automatically repositioned the digger position in the mining blocks
- Fixed an issue where the **Cancel** Button to undo split block didn't work
- Fixed an issue where the animation showed incorrect sequence order when there were split blocks
- Fixed an issue where the split block process showed the mesh number from the bench underneath
- Fixed a crash that occurred when selecting an active bench after performing split block operation
- Fixed an issue where a block number was still displayed after the animation had stopped running

Underground Engineering

- Fixed an issue in longwall creation where entering numbers with a decimal point only captured the digits after the decimal. For example, typing "30.5" would incorrectly take "5" as the input due to premature number formatting.
- Fixed an issue where re-running underground reserves in the Run Reserves Form didn't completely overwrite existing metadata, leaving some outdated entries. Now, clicking OK or Apply will wipe all metadata and rewrite from the table file, except for the six metadata produced when creating UG mining blocks: RESTOPSURF, RESBOTSURF, BENCH, MATERIAL, UGBLOCKTYPE, and PANEL.

- Fixed an issue where reserving UG mining blocks with mesh not loaded in the CAD Window resulted in the output reserve table not having the Material Column
- Fixed an issue where the **SMAX** Option in the **Subsidence** Group failed to run because it didn't read the Grid spec from the **Setup** Option

Plot Designer

- Fixed an issue where resizing the viewport resulted in the title block container being resized because their positions were aligned
- Fixed an issue where the **Properties** Dock didn't update when switching to a different viewport
- Fixed a crash that occurred after clicking the **Preview & Print** Button on a rapid plot file

Archive and Recover Tool

• Fixed an error where the **Archive & Recover** Tool couldn't be started

Pit Optimization Pro

- Fixed the **Add Region** and **Edit Region** forms to make it easier to adjust the value of benches and block model counts (I, J, K)
- Fixed an error that occurred when trying to run the optimization module in Run Optimization Node of the Pit Optimization Pro Form

Removed

- Removed the Like acceses mode Checkbox from the Filter Form
- Removed the Run Reserves Option within the UG Solids Group of the UG
 Coal Tab. Users can now calculate reserves for the UG mining blocks by
 going to the Reserves Tab and click Run Reserves in the Reserves Group.