

# LVA - Longwall Visual Analysis

## Information Sheet



## LVA\_Overlay User Guide

for LVA\_Overlay versions 1.24 and later

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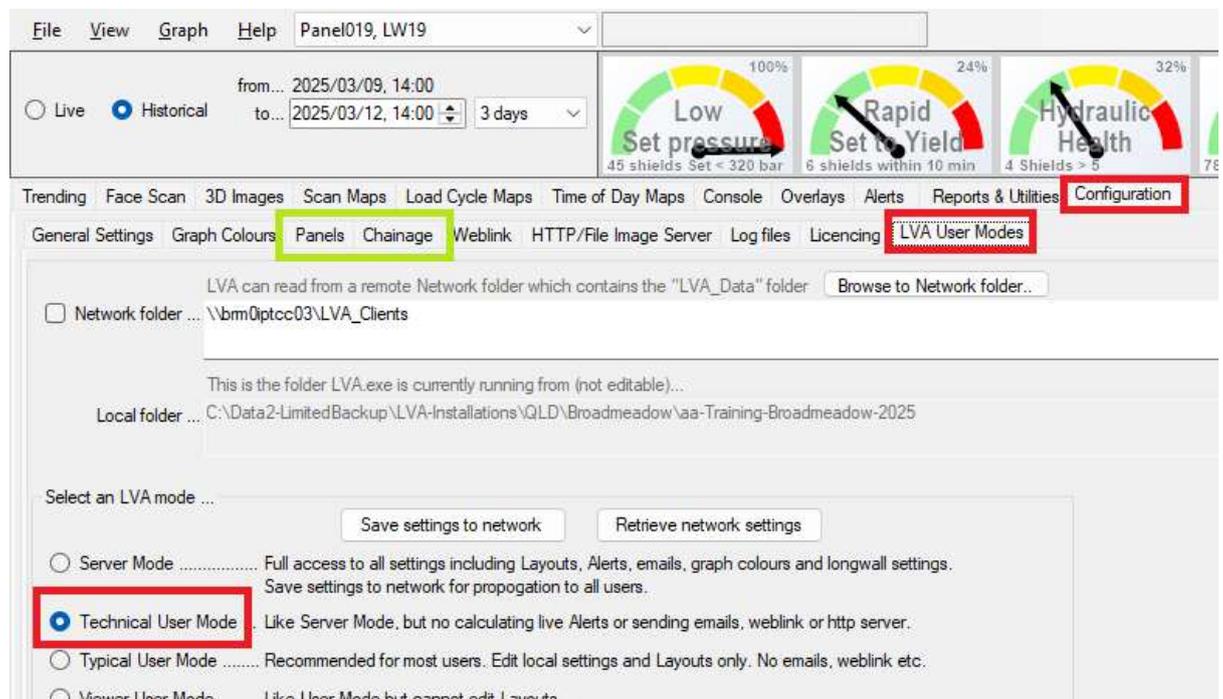
# 1. Introduction

You can overlay LVA data onto a picture of a mine map (e.g. jpg or png file) from within the LVA program, but if you want to overlay data onto AutoCAD DWG files then you need to use the separate LVA\_Overlay program.

This document outlines the process and options for overlaying LVA data onto AutoCAD DWG files using the utility program LVA\_Overlay.exe

This section is intended for first-time users. Once you're more familiar with the process you will be able to skip some of the steps. Some steps may be required in LVA to update chainage data and check panel coordinates, and also in LVA\_Datalink to add eastings and northings of the panel coordinates if necessary.

If can't see the tab options for panels and chainage you may need to change your LVA into Technical (or Server) User Mode.



# 2. Check the Chainage Data

Daily chainage data are required in order to locate the LVA data on the mine plan. Make sure the chainage data is correct and up to date in LVA – go to Configuration|Chainage and check the chainage dates and values, and update if necessary. You can enter dates and chainages directly into the table, or import from a spreadsheet after specifying the spreadsheet location and column numbers for dates and chainage. If the spreadsheet is always in the same location, and someone

updates it regularly, you can optionally tick the box for LVA to load new chainage data automatically every day – see screenshot below...

### 3. Check LVA panel configuration

Whilst in LVA, check that the longwall panel you want to overlay has its correct eastings and northings coordinates..

- Got to Configuration | Panels
- Select the panel you want to overlay by clicking on a cell in its column (LW14 in the example below)
- Check the number of shields, and the eastings and northings for MG and TG Start and End.
- You can't edit the values from this section in LVA, if they need to be edited then this must be done from LVA\_Datalink (see next section).

	Panel001	Panel012	Panel013	Panel014	Panel015
Panel name	Panel001	LW12	LW13	LW14	LW15
Start date (yyyy/MM/dd)	0	2017/03/23	2018/11/11	2020/07/27	2021/02/10
End date (yyyy/MM/dd)	0	2018/10/31	2019/11/30	2021/02/10	2021/02/10
Number of shields	0	158	158	158	158
Calculated Panel length	0	3309	3400	1399	1884
Calculated Panel width	0	320	320	320	324
MG start - Easting	0	605017.1	605136.3	604178.3	604178.3
MG start - Northing	0	7586743	7586368	7585990	7585990
MG end - Easting	0	601710.5	601734.8	602779.1	602779.1
MG end - Northing	0	7586743	7586368	7585990	7585990
TG start - Easting	0	605023.1	605136.3	604178.3	604178.3
TG start - Northing	0	7587063	7586688	7586310	7586310
TG end - Easting	0	601710.1	601736.3	602779.1	602779.1
TG end - Northing	0	7587063	7586688	7586310	7586310

## 4. Edit panel configuration in LVA\_Datalink

If the eastings and northings need to be edited then this must be done from LVA\_Datalink, which should be running on the LVA server.

- In LVA\_Datalink, go to “Panels”, locate the column for the panel you want to overlay LVA data onto, and check the data for that column – start and end dates, number of shields, and the eastings and northings. If all correct then no further action is required in LVA\_Datalink, go to next section.
- If you need to edit any parameters then continue...
- First make a note of the eastings and northings of the four corners of the panel you want to overlay (MG and TG Start and End).
- In LVA\_Datalink, turn scanning OFF and unlock for editing.
- The example below shows data for Panel022, called Longwall 22.
- Click the Panels tab, and optionally “Show Panel Layouts”
- Check and edit as necessary the data for panel name, number of shields, and the eastings and northings for the four corners of the panel.
- Don’t forget to turn LVA\_Datalink scanning back on!

The screenshot shows the LVA\_Datalink 5.47.32 interface. The title bar reads "LVA\_Datalink 5.47.32 - Panel022 - Longwall 22". The interface includes a menu bar with "File" and "Help". Below the menu bar, there is a status bar with the text "This app is a critical part of the LVA software suite. It should run always ... it collects and saves your longwall data." The main content area is divided into several sections:

- Scan Target:** Local (selected) and Tunnel.
- Scan Settings:** Scanning is OFF (checked), Locked (no editing) (checked), 170 shields, Panel022 - Longwall 22, Scan data every... 20 sec.
- Status:** Scanning OFF (red button).
- Navigation:** Latest scan, Tags and settings, Data sources, Cycles processing, Panels (selected), Network paths, Licencing, Fast scanning.
- Notes:** Panel dates should not overlap - each panel should finish before the next one starts. Eastings and Northings are optional. Check that all completed panels have the correct start and end dates. Check the number of shields for each panel. Current panel: check start date is correct, and end date is later than latest anticipated end.
- Buttons:** Add New Panel, Show Panel layouts (checked).
- Table:** A table with columns for Panel name, Start date, End date, Number of shields, MG start - Easting, Northing, MG end - Easting, Northing, TG start - Easting, Northing, and TG end - Easting, Northing. The data for Panel022 is highlighted in blue.
- Diagram:** A diagram showing the panel layout for Longwall 22 (Panel022) with MG and TG start and end points.

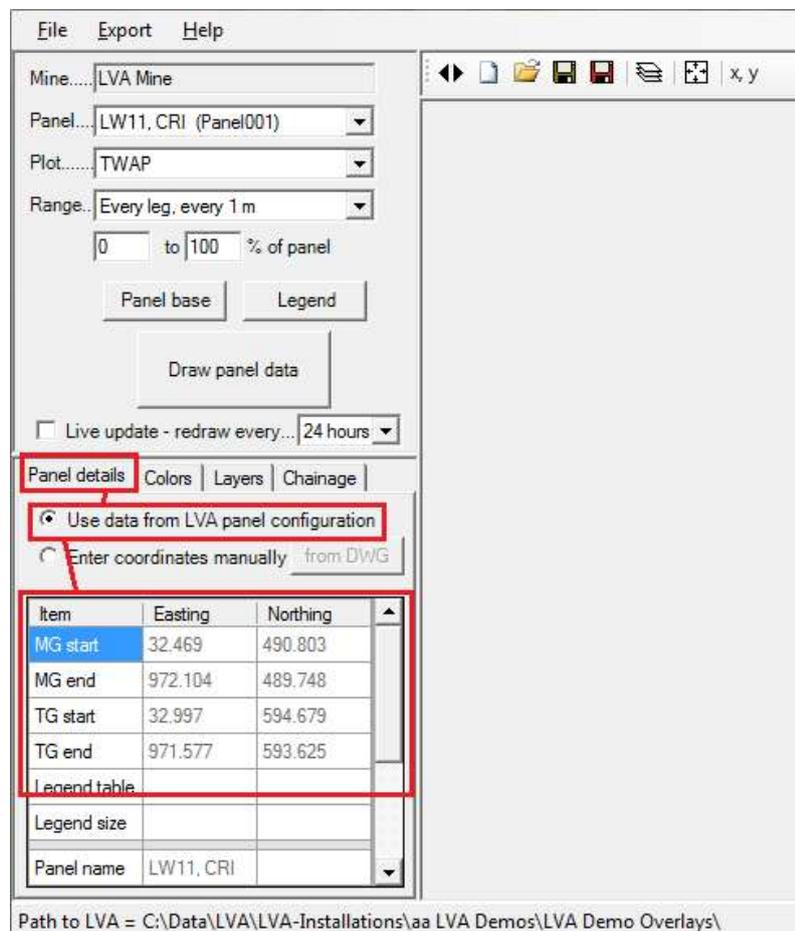
	Panel001	Panel015	Panel022
Panel name	Panel001	Panel015	Longwall 22
Start date	0	0	2024/08/01
End date	0	0	2024/12/31
Number of shields	0	0	170
MG start - Easting	0	0	293541.4
Northing	0	0	6194387
MG end - Easting	0	0	291051.9
Northing	0	0	6194924
TG start - Easting	0	0	293477.7
Northing	0	0	6194098
TG end - Easting	0	0	290988.5
Northing	0	0	6194636

## 5. Get your DWG file

Obtain or create a DWG mine plan in CAD, it may help to strip it down a bit so it's just a basic outline of the roadways etc. Also it should be exported as AutoCAD 2013 file format for compatibility with LVA\_Overlay.

## 6. Run LVA\_Overlay

- At this stage LVA should be correctly configured with updated chainage and panel coordinates, and you can start up the separate LVA\_Overlay.exe utility (contact LVA if you need a copy of this utility).
- The LVA\_Overlay program and its DLL dependencies should be installed into the same folder as LVA, and when you start it up it will display the available Panels of LVA data.
- Under the "Panel details" tab, check that the Eastings and Northings are correct.

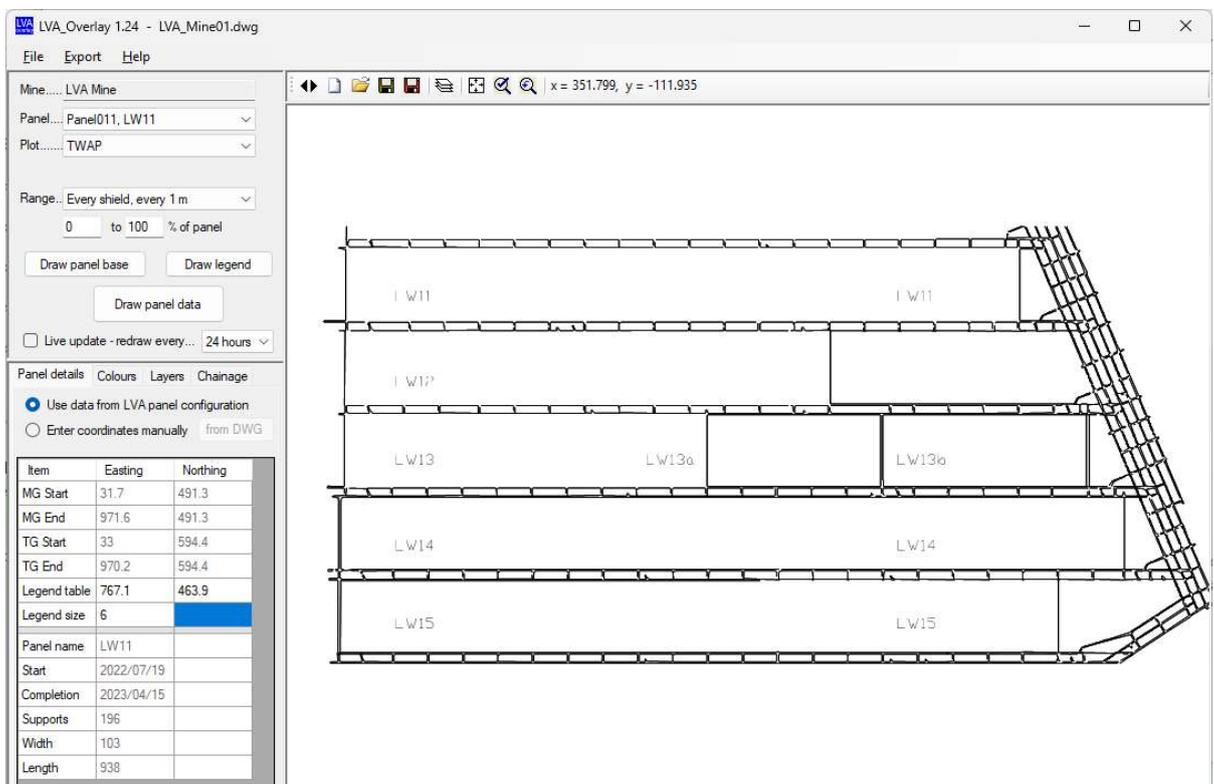


- Click “File | Open CAD file”, or click the Open file icon, and select the DWG file you wish to open.



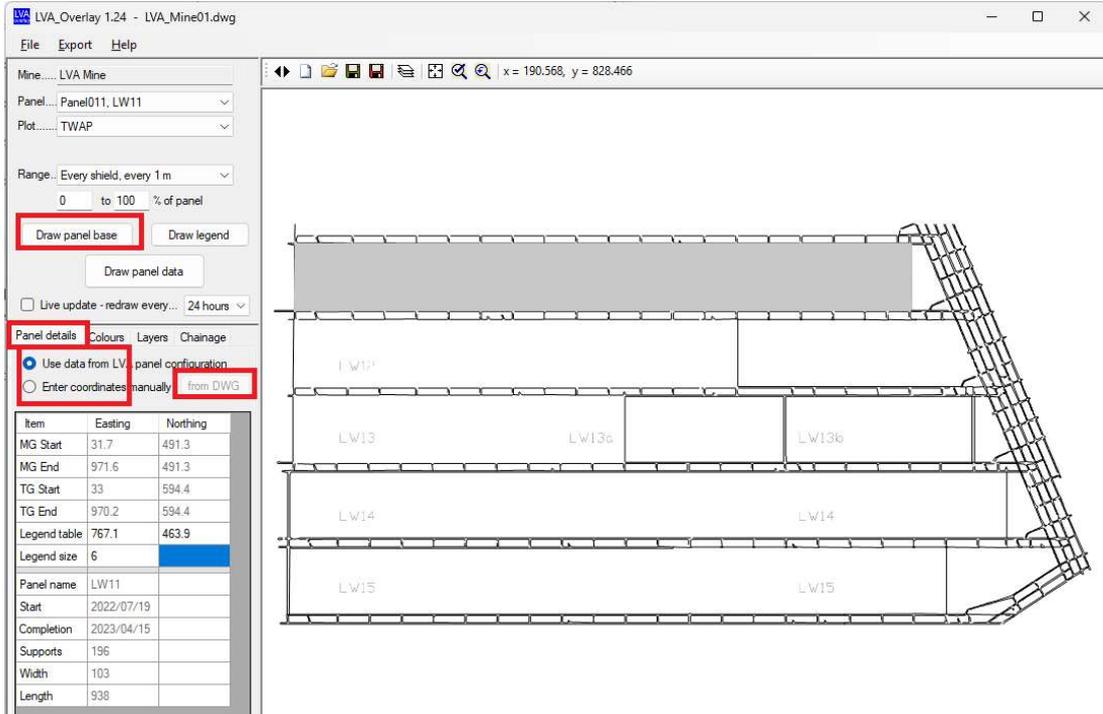
- Sometimes when you open a DWG file it looks blank because it's all compressed into a tiny dot. This has something to do with the way it was saved, e.g. with a zero reference point. If this happens you need to hunt around for the dot and zoom in.

- Once loaded, you should see the file in LVA\_Overlay.

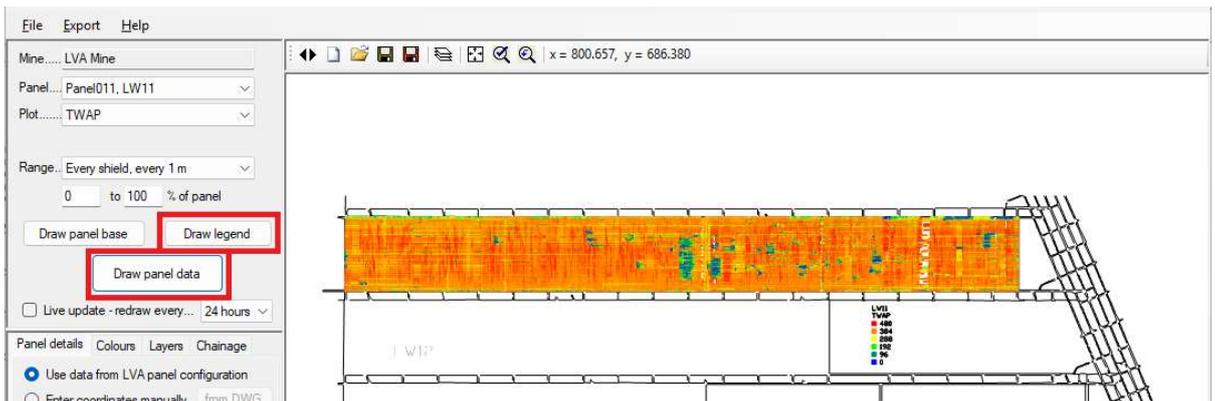


- Select a panel to plot (“Panel011, LW11” in this example).
- Check that the panel coordinates are correct by clicking the “Panel base” button. This will draw a grey background over the panel. Make sure it's covering the panel correctly.
- Note that you can choose to use the coordinates from the LVA and LVA\_Datalink panel configuration, or you can select “Enter coordinates manually” and either type values in or click a box, click the location on the drawing, then click “from DWG”.

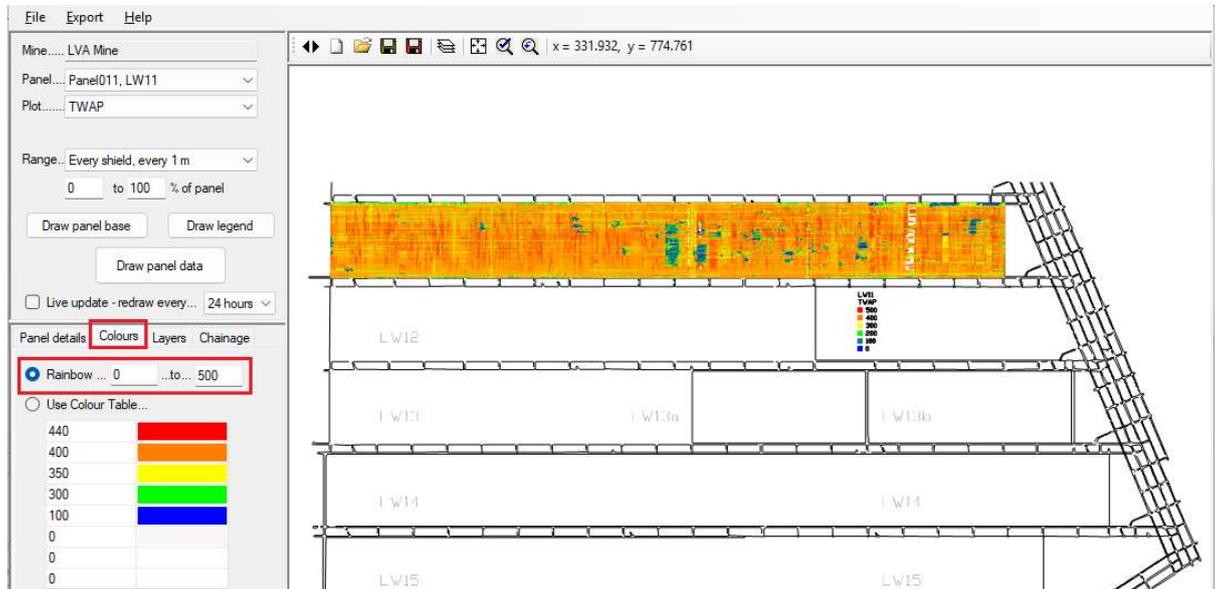
- Use the same method to specify where the legend table should go (type it in or select the cell and click the drawing, and then click “from DWG”).



- If all looks good, then choose what to plot (TWAP for this example, every shield, every 1 metre, and 0 to 100% of the panel) and then click “Draw panel data”.



- You can change the colour scale to match the LVA colours (they are not automatically imported from LVA)... click “Colours” and choose (in this example) Rainbow from 0 to 500 bar. You can also select the custom Colour table and enter values and colours manually.

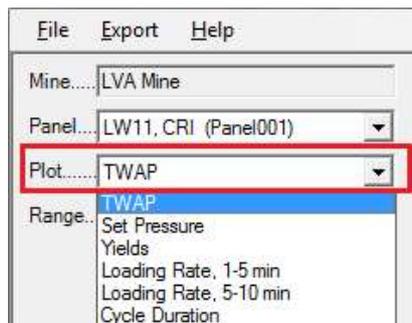


## 7. Adjust the legend table

- Click the Easting box against “Legend table”.
- Then click on the drawing where you want the legend table to be.
- Click the “from DWG” button and the coordinates will be entered into the table.
- Enter a legend text size (6 to 12 often works well).
- Then click the “Draw Legend” button.
- (Note you can use a similar method to enter panel coordinates manually, if the “Enter coordinates manually” option is selected).

## 8. What to plot

- The above example shows an overlay of TWAP (Time-Weighted Average Pressure). You can select other data to plot instead, by clicking the drop-down box near “Plot”. Choose from TWAP, Set pressure, Yield counts, Loading rates, Cycle duration, etc.

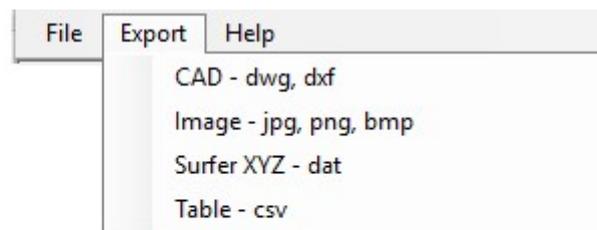
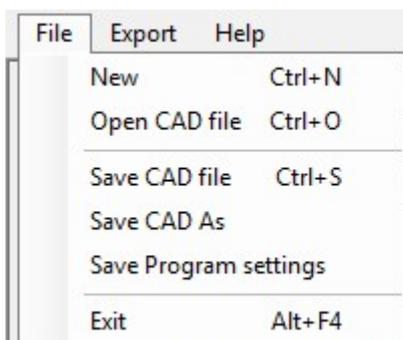


## 9. Panning and Zooming

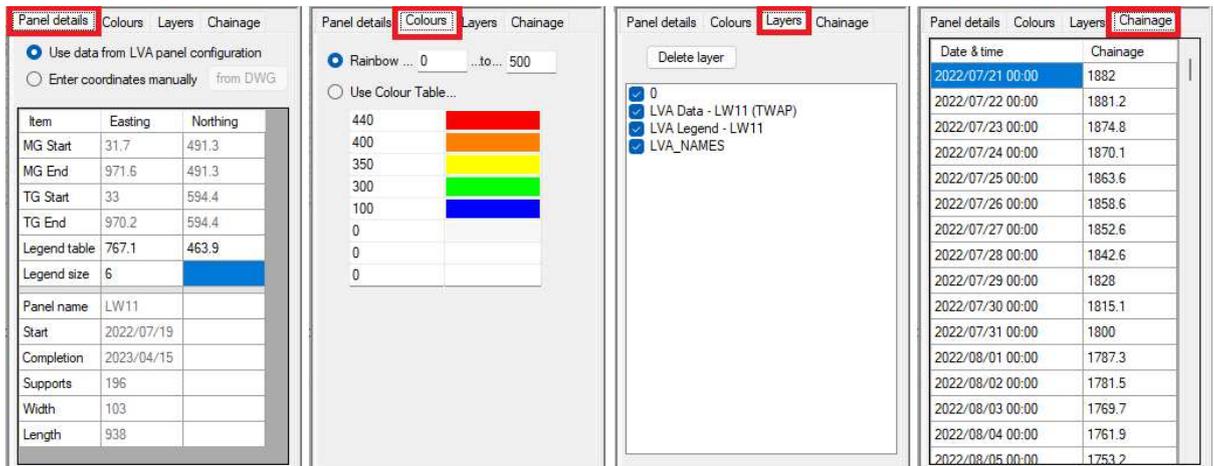
- Zoom in/out with the mouse wheel.
- Zoom a rectangle – Shift-click and drag.
- Pan – Click and drag.

## 10. Other features

- Look over the menu items for other features.
- Note that Program settings are saved automatically when you close LVA\_Overlay.



- Look over the tabs for options for Panel details, Colors, Layers, and to check or edit chainage data.



- Look over the drawing icons for full screen, New, Open, Save, Save As, Layers, Zoom extents, save & restore zoom state...



- To save your drawing, click “File | Save” or click the grey save icon.
- Or click the red “Save As” icon to save as an image (jpg, png etc), or export the overlaid data to various file formats like csv or surfer format.
- The LVA data in the DWG file are saved as layers, so you can open the saved DWG file in AutoCAD and copy the layer to other DWG or AutoCAD mine maps.
- Note that any changes made in LVA\_Overlay are *not* passed back to LVA.