“Create grids angle” – QGIS plugin

Emir Memic (emir_memic@windowslive.com)

(Version 0.2 for *Education purposes*)

A sample data set is available at GitHub repository (plugin webpage). A user should first test the plugin with this data after installation:

https://github.com/memicemir/create_grids_angle_qgis_plugin/blob/main/HeidfeldhofShapeFiles-creategridsangleQGSIplugin.zip

Zipped files should be downloaded and unzipped to use!

IMPORTANT: If a user is using their own field boundaries or field edge, they HAVE TO backup up their data before uploading to QGIS and producing grids with this plugin!

Contents

1. Using existing Field boundaries and Field Edge shape files 2

2. Drawing Field boundaries and Field Edge shape data within this plugin.....5

3. Drawing vehicle tracks.....7

1. Using existing Field boundaries and Field Edge shape files

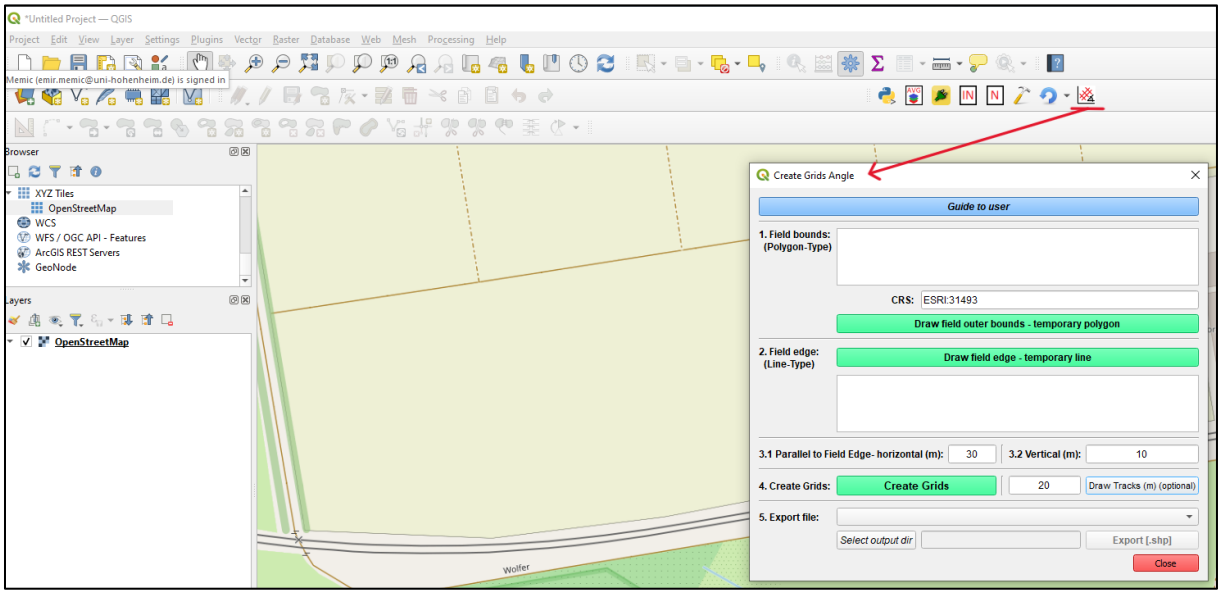

Figure 1. Create grids angle – plugin interface.

A user can upload Field Outer Boundaries and Field Edge shape file into QGIS layers and start “Create grids angle” plugin.

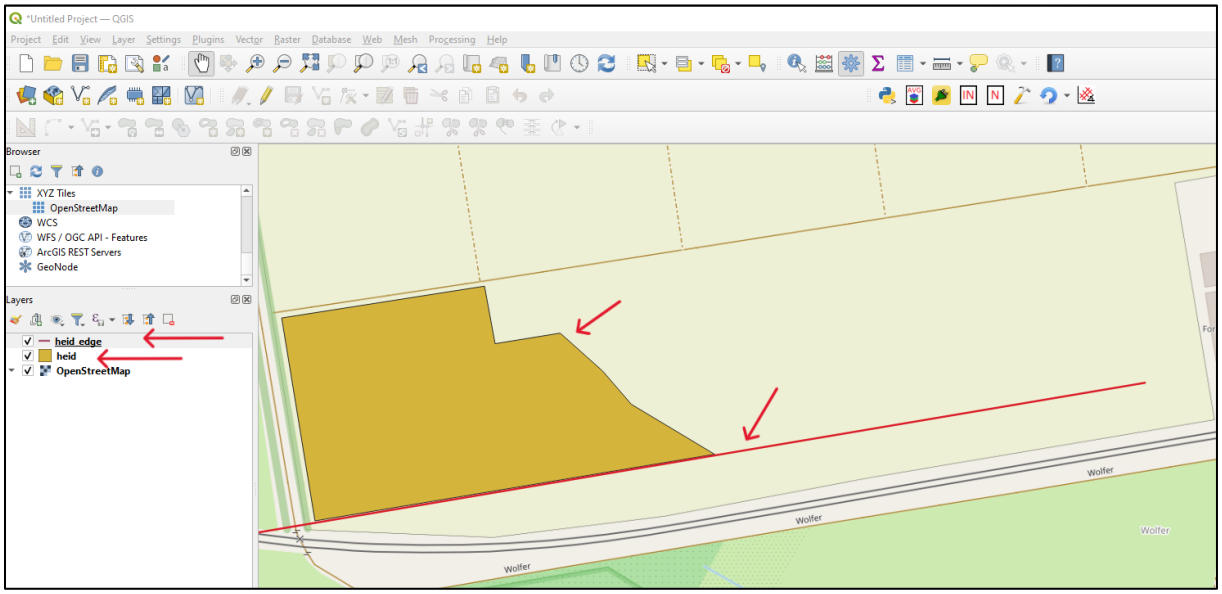

Figure 2. QGIS interface with the data sample loaded in QGIS layers.

After the user start “Create grids angle” plugin it will automatically list Polygon type shape layer into the “1. Field bounds” list window for selection and list Line type into the “2. Field edge” list window for selection (Figure 3.).

When user selects Field bounds layer in the list the plugin will automatically populate CRS, based on that layer (Figure 3.).

Afte user selects “Field edge” layer from the list a user can set grid dimensions (width/height) by setting horizontal (width) and vertical (height) parameters in meters (m) to automatically create grids by clicking on 4. Create Grids push button (Figure 4.).

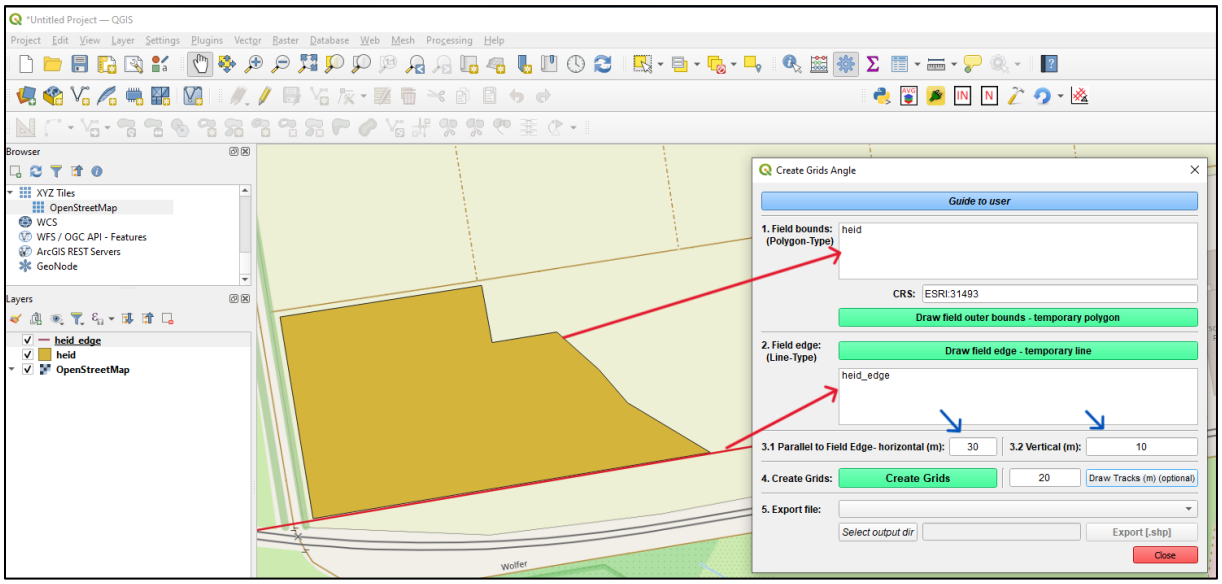

Figure 3. Create Grids Angle plugin interface with setup.

Create Grids push button will produce a new temporary layer with name "*_grided_cliped" in QGIS layers (Figure 4.).

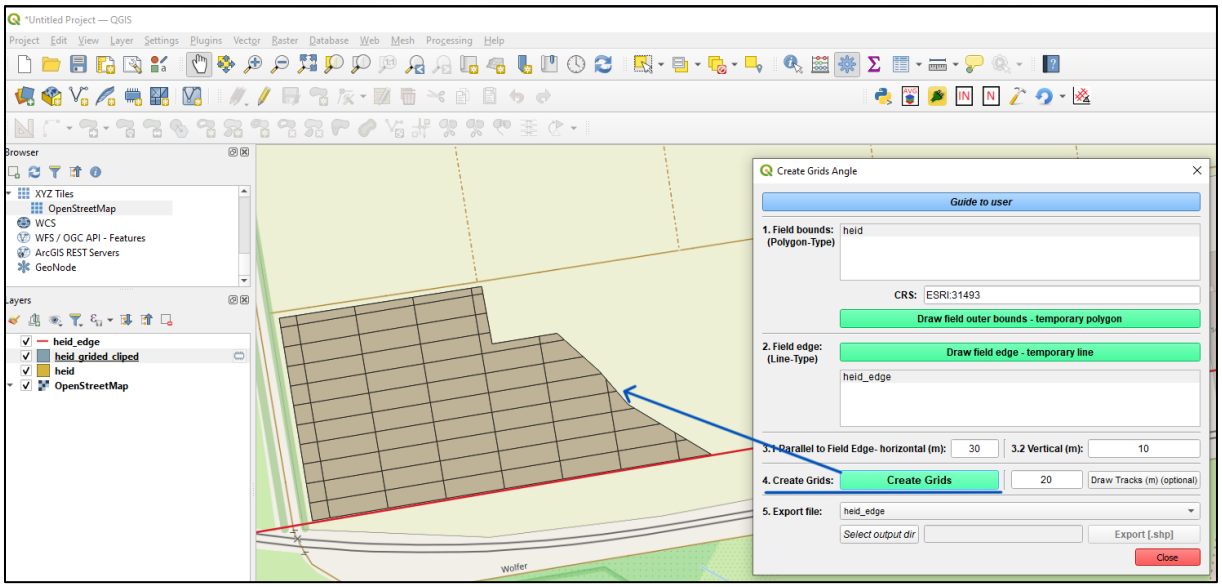

Figure 4. Resulting grided layer.

If everything went well and user is satisfied with the layout they can save it by Export -> Save Features As -> ESRI Shape file in selected directory location (Figure 5.).

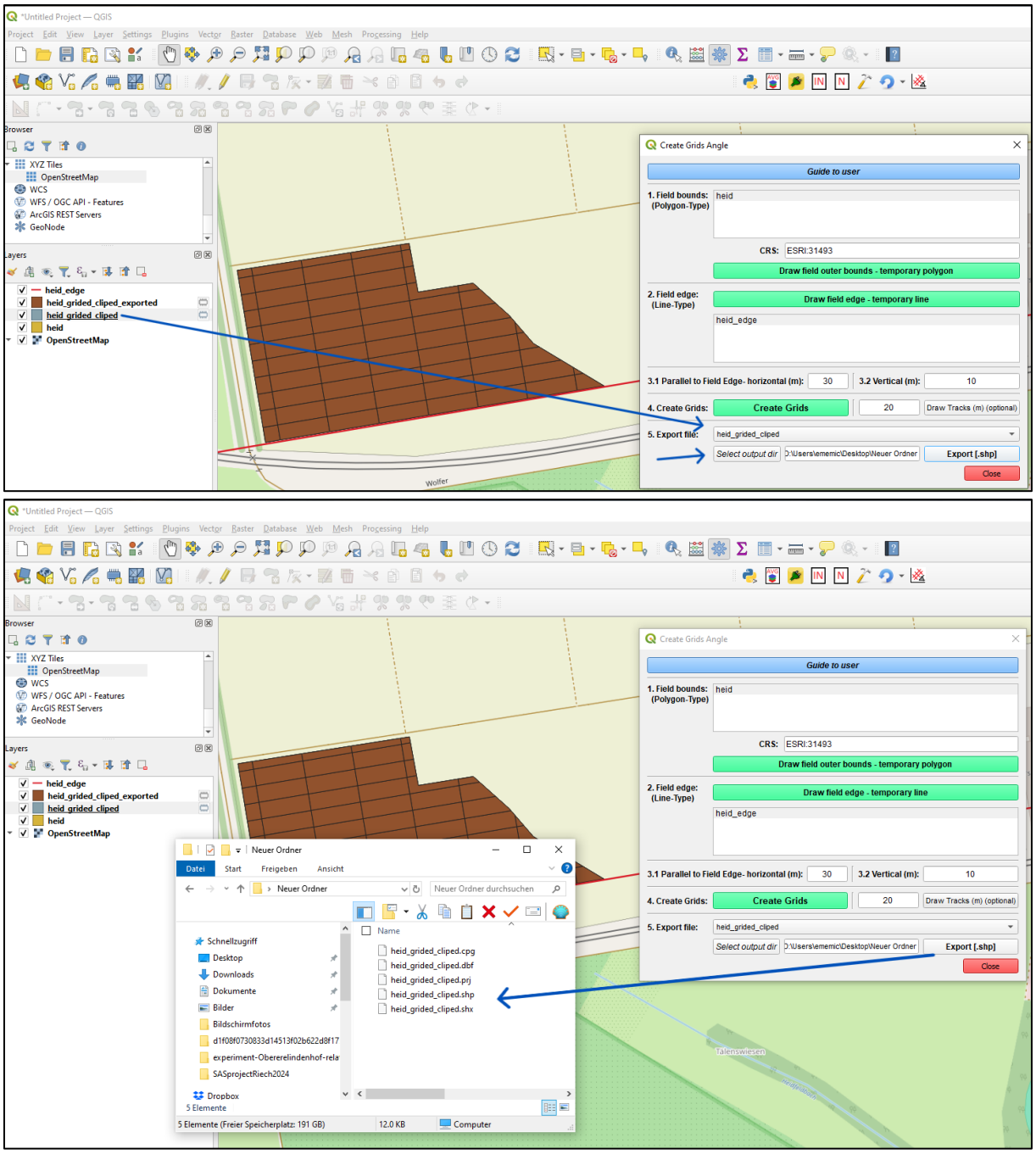

Figure 5. Saving permanently grided output layer in QGIS.

2. Drawing Field boundaries and Field Edge shape data within this plugin

A user can create Field boundaries and Field edge shapes within “Create Grids Angle” plugin. By clicking on “Draw field outer bounds – temporary polygon” push button (Figure 6.) QGIS will allow users to draw polygon shape around desired field location. With the mouse **left button** the user can draw shape and after delineating desired shape **mouse right button** will finish editing and commit changes to temporary shape layer (Figure 7.).

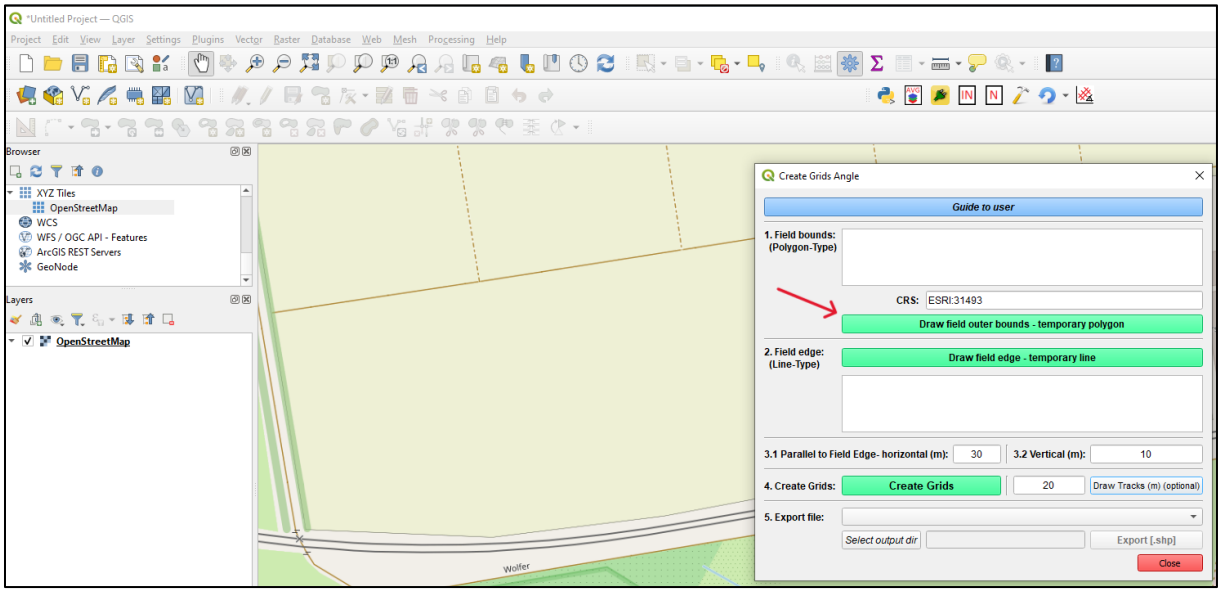

Figure 6. Draw field outer bounds – temporary polygon” push button.

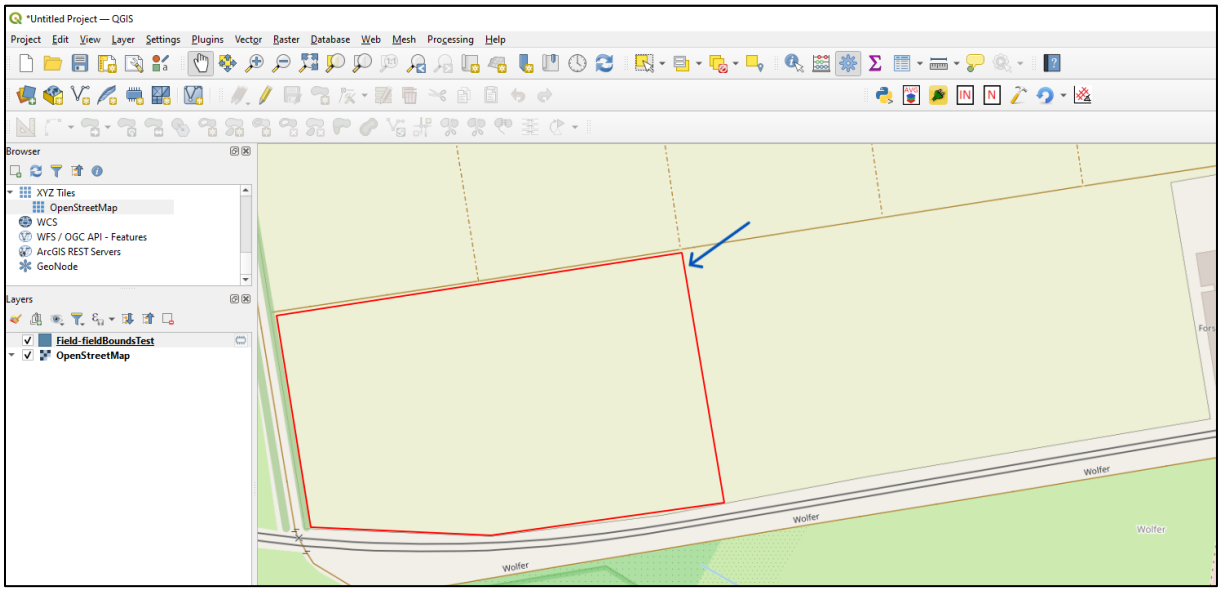

Figure 7. Temporary polygon shape layer.

Afte the user has created a polygon shape file the layer will be added to “Create Grids Angle” list window (Figure 8.), and the user can proceed with drawing Field edge line.

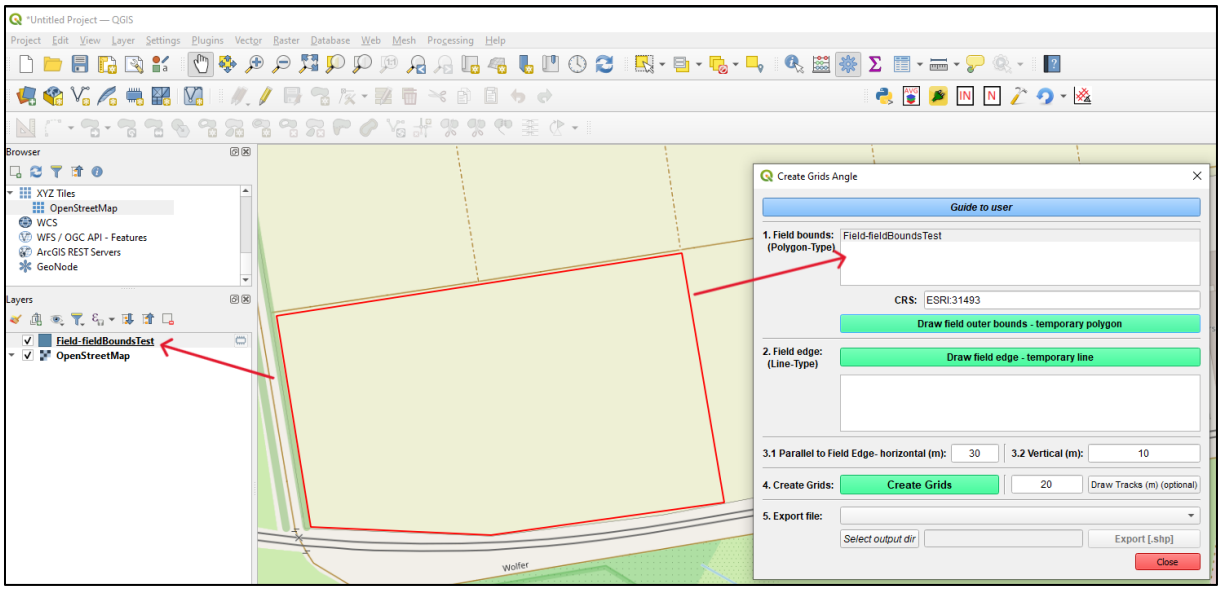

Figure 8. "New" Create Grids Angle interface setup.

By clicking on the green „Draw field edge – temporary line" push button a user can create Line type layer in QGIS with **mouse left button** starting point and ending point (in total two clicks) and with **mouse right button** commit changes to the QGIS layer (Figure 9.).

Very IMPORTANT: a user should have only Line type with two points!

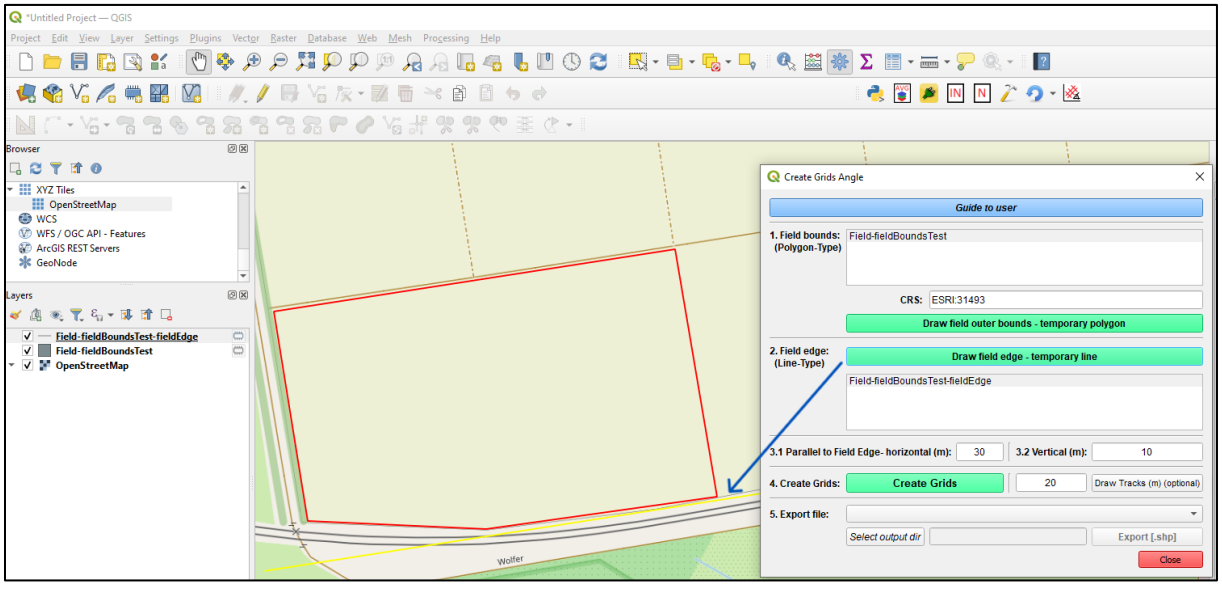

Figure 9. Draw field edge – temporary line push button.

Afte both shape layers are created, and user clicks on Create Grids push button the plugin will produce angled grided layer (Figure 10.).

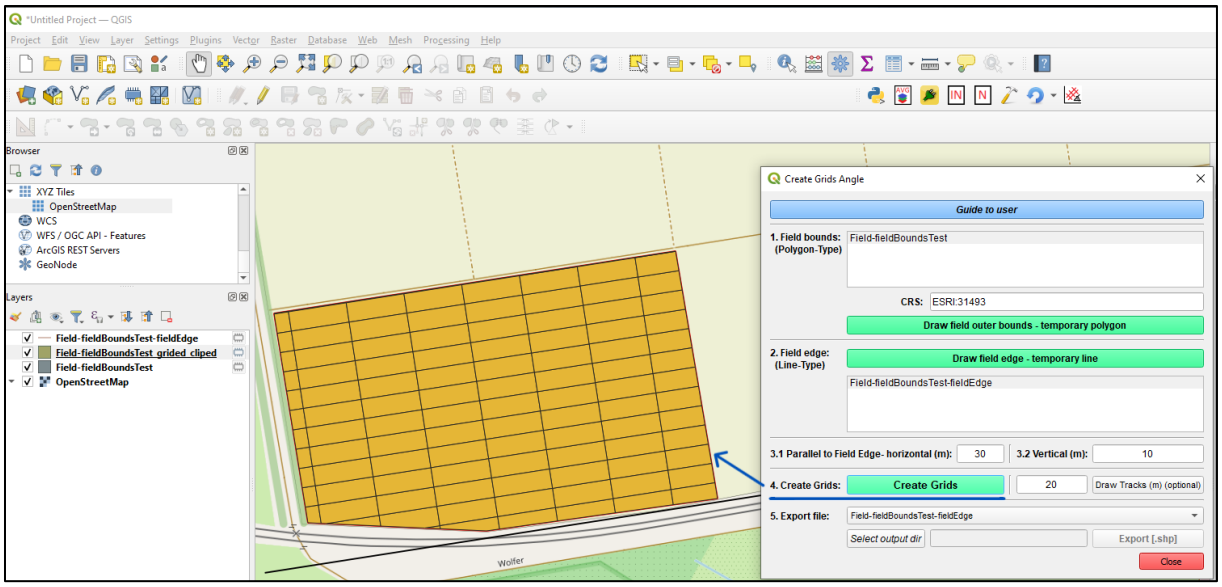

Figure 10. Resulting grided layer.

3. Drawing vehicle tracks

In section 4. Of the interface there is an optional feature. A user can create “vehicle tracks” line type layer, to get a general idea of the grid’s layout and potential management. In the example in Figure 11. it is assumed that the vehicle working width is 20m (10m on the left and 10m on the right).

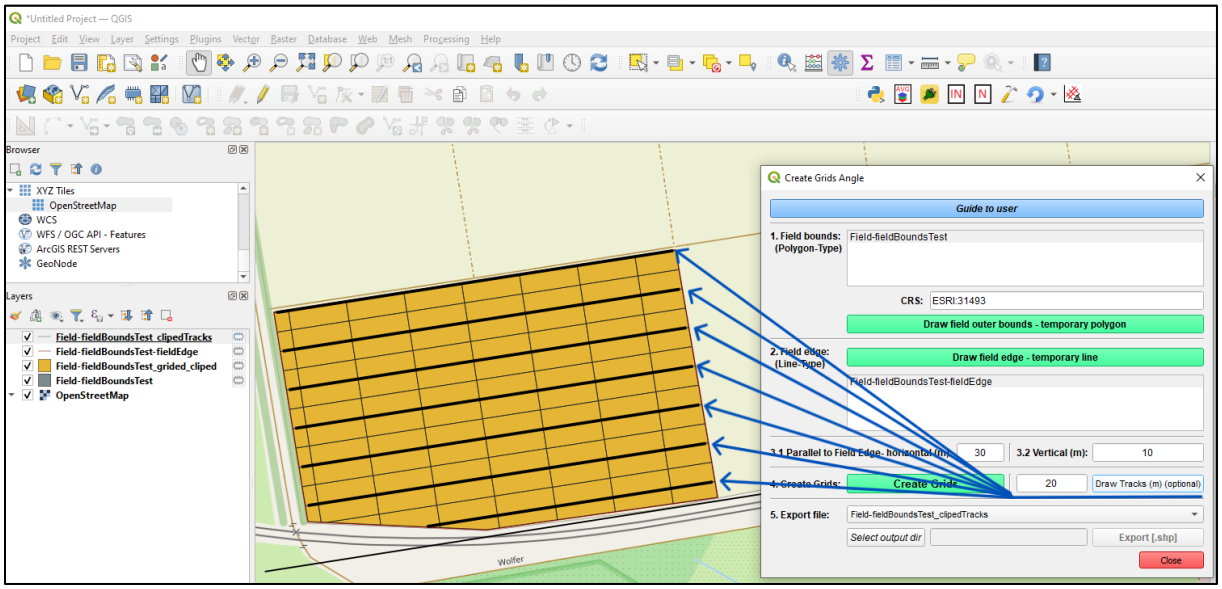

Figure 11. Checking potential management layout of the grids with vehicle track setup.