

CONSIDERATIONS FOR THE USE OF SHAPEFILE AND GEOPACKAGE FORMATS

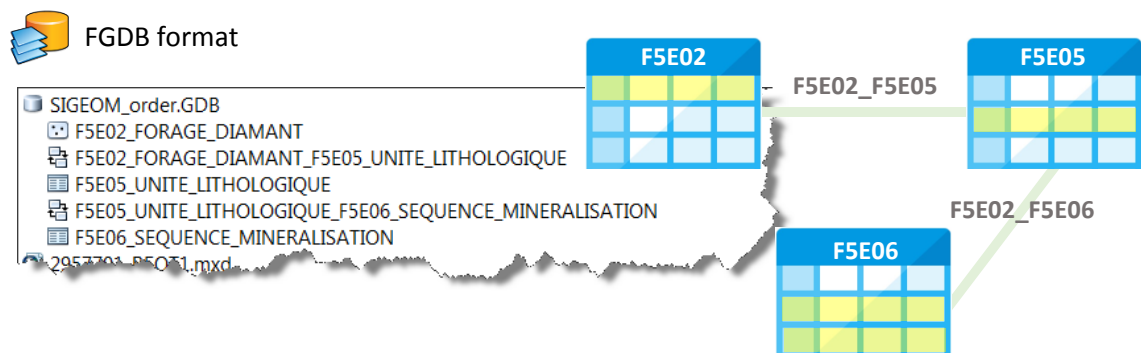


SIGEOM geomatics data are available in **FGDB**, Shapefile (**SHP**) and Geopackage (**GPKG**) formats, as well as in **CSV** format for point data. While SHP and GPKG both consist of open, easy-to-use data exchange formats that can store geographic and descriptive information, their inherent limitations must be considered. This sheet illustrates the constraints and features of use of these two formats.

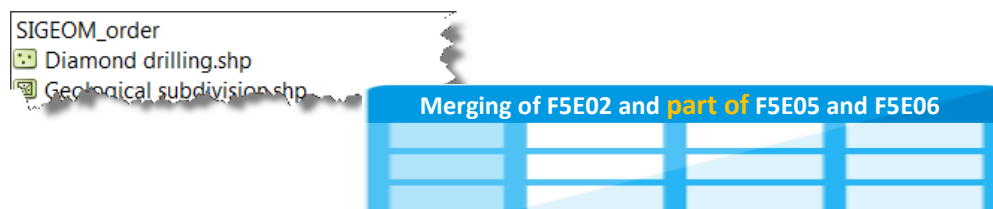
Shapefile Format (SHP):

- Does not fully translate the complexity of the relational data model. Indeed, **annotations**, attribute **relationships**, **topology relationships**, attribute **domains**, coordinate **precision** and several other characteristics are not supported by this data format.

Example of **relational** structure for diamond drilling:



Shapefile format

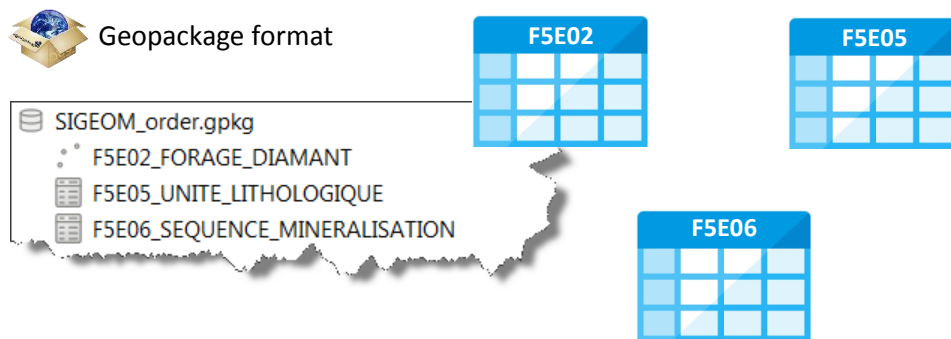


- Shapefiles make use of the “dBase” file format (.dbf file) to store attribute tables. This format is obsolete as it does not benefit from recent improvements in data representation in this type of file, such as the Unicode standard that allows multiple writing systems to be displayed.
- Null values cannot be stored;
- Numbers are rounded up;
- Unicode character strings are not supported;
- Field names longer than 10 characters are not allowed;
- The storage space for a record is only 4000 bytes;
- Maximum number of fields is limited to 255, etc.

Geopackage Format (GPKG):

- Fully translate the complexity of the relational data model as long as the relationships between the tables are manually added. However, **annotations**, **topology relationships**, attribute **domains** are not supported by this data format.

Example of **relational** structure for diamond drilling:



Based on the GIS software used, note that relationships between tables must be created directly from the software in question.

- Does not display the geometry of a layer in QGIS when at least one record of the table does not have geometric data. In this situation, the geometric data layer is interpreted as an attribute table.

For this reason, records without geometry from the E6E02_DOCUMENT layer of SIGÉOM (EXAMINE documents) were removed from GPKG files, which therefore contain only geometric elements (georeferenced).