

2 | UTILITY QUALITY LEVEL ATTRIBUTES

2.1 Quality Level

2.1.1 Quality Level D

Typical task to be undertaken by the surveyor leading to utility quality level D are;

- Search for existing utility records to assist in identifying utility owners that may have facilities on or be affected by the project. Source of information may include, but are not limited to;
 - *Local Authority*
 - *Utility Owner*
 - *Visual site inspection*
- Collect relevant records from utility owner

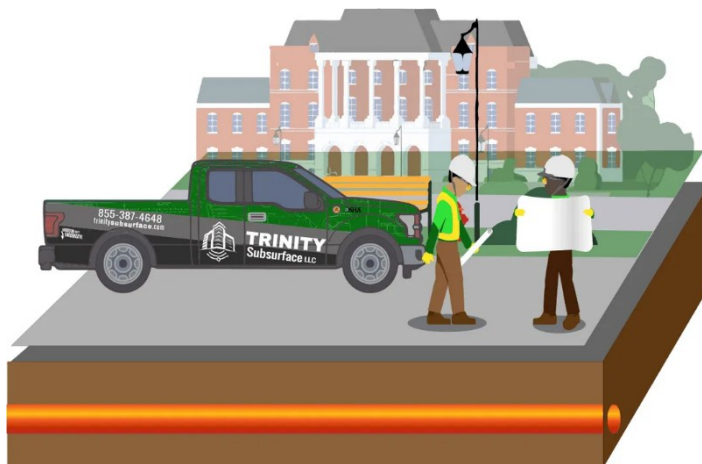


FIGURE 2.1: QUALITY LEVEL D

QL-D data is the least reliable form of utility data because it is information that is solely based on utility records and oral recollections.

QL-D data should never be considered reliable enough for critical tie-ins or utility crossings.

Each quality level represents a different “reliability” for the utility information presented.

2.1.2 Quality Level C

Typical task to be undertaken by the surveyor leading to utility quality level C are ;

- ❑ Locate surface features on existing records and ground surface
- ❑ Survey such features if they have not been previously surveyed
- ❑ Correlate relevant utility records to the surveyed features, taking into account the shape, size and characteristics of these surface features
- ❑ Resolve discrepancies when records and features do not agree



FIGURE 2.2: QUALITY LEVEL C

Quality Level C data is slightly more reliable than Quality Level D because it involves **surveying** and using professional judgment in correlating above-ground utility features with QL-D data.

Visible **above-ground utility features** can be found during a field employee walkthrough, including:

- Manholes
- Valve Boxes
- Utility Marker Posts
- Hydrants
- Electric Boxes

2.1.3 Quality Level B

Typical task to be undertaken by the surveyor leading to utility quality level B are ;

- ❑ Use an appropriate set of surface geophysical methods or perform trace to search for underground utilities within the project area
- ❑ Mark to indicate location of utilities and survey all marking to the accuracies and precision dictated by the project's survey control.



FIGURE 2.3: QUALITY LEVEL B

Quality Level B is obtained in the field using surface geophysical equipment to designate the underground utility within an acceptable tolerance zone.

The utilities are designated using paint and flags, which can be surveyed and plotted on project drawings. QL-B data is the most widely used quality level for subsurface utility engineering.

2.1.4 Quality Level A

Typical task to be undertaken by the surveyor leading to utility quality level A are;

- ❑ Use an appropriate method of data acquisition that will achieve the accuracies and precision required by the project. These accuracies are at 10cm or better in vertical as well as in horizontal. Exposure and survey of the underground utility at each specific location where quality level A data are to be obtained may be performed whenever necessary.
- ❑ Calibrated survey equipment and surface geophysical equipment will be used.
- ❑ If need be, excavate test hole to expose the underground utility and measure.



FIGURE 2.4: QUALITY LEVEL D

Quality Level A data is the most reliable form of utility data because it involves physically exposing an underground utility using vacuum excavation.

QL-A data is most commonly acquired at critical conflict points for proposed installations of structures or utility systems. (Subsurface utility engineering, 2024)

Utility data collected includes:

- Depth
- Elevation
- Horizontal location
- Material
- Condition

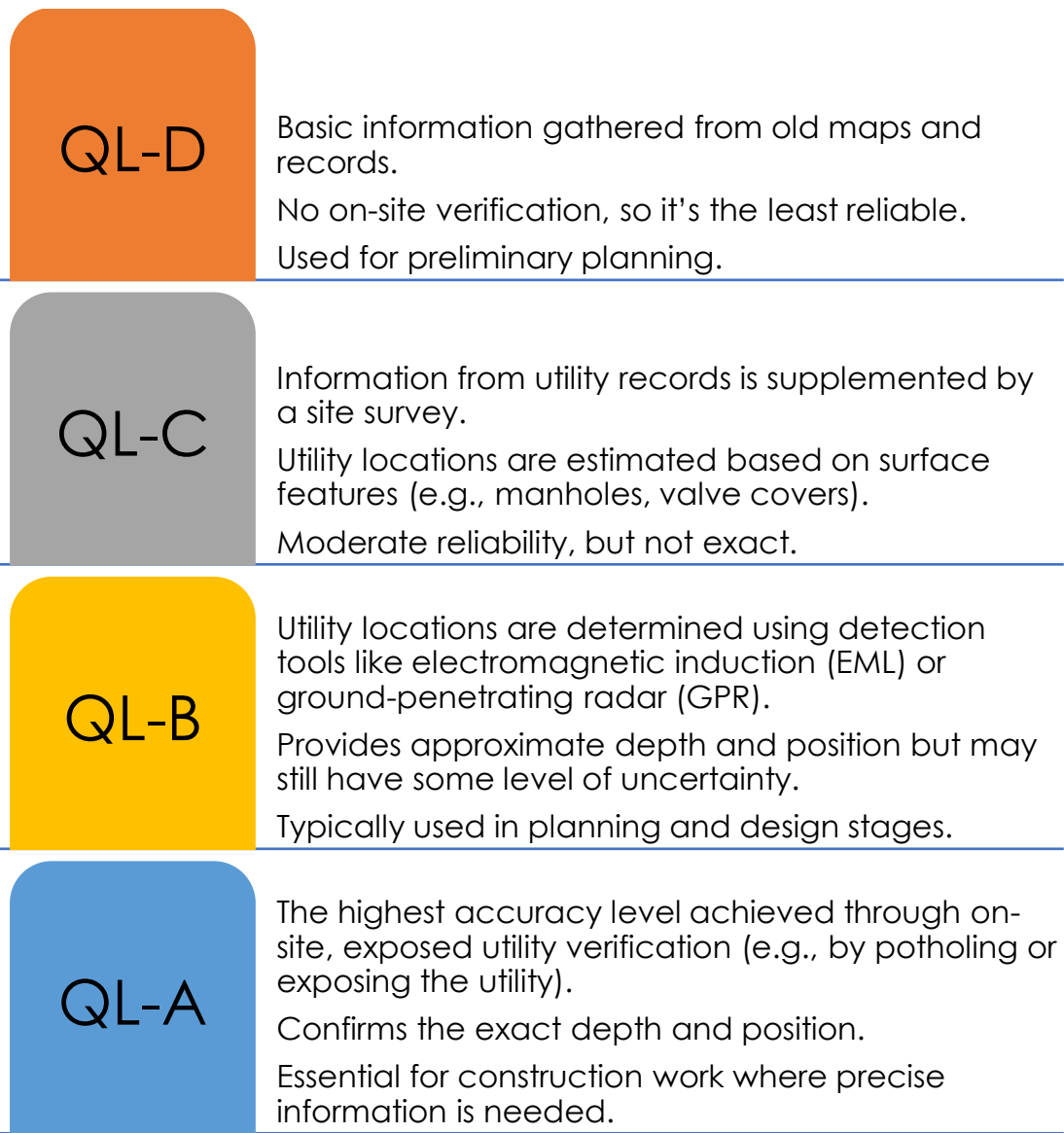


FIGURE 2.5: SUMMARY OF QUALITY LEVEL