

Target Quality Control and Quality Assurance

The Target system is intended to streamline geochemical quality control by providing a single environment for quickly calculating summary statistics and manipulating data values.

The Target Drillhole system performs a small number of vital Quality Control and Quality Assurance (QA/QC) tests when importing your data. These tests include anything that will impact the whole project, for example duplicated Hole IDs. An Import.log will be displayed after importing if such problems are found.

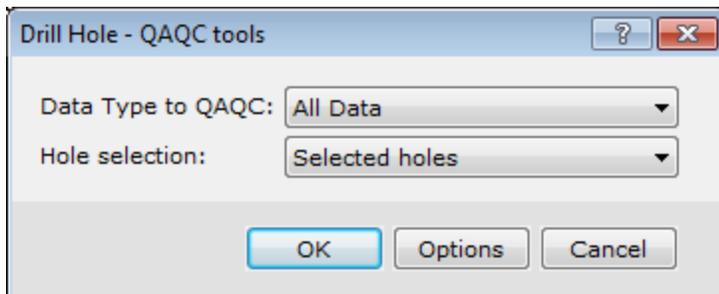
Target also provides the tools to enable you to perform detailed QA/QC tests on each of the five different data types (Collar Data, Dip/Azimuth Survey, Easting-Northing Survey, From-To Data, and Point Data).

The *Drill Hole - QAQC tools* dialog asks you to select the type of data to perform the QA/QC tests on. For each data type there are different sets of options you can enable/disable using the **Options** button.

Each test produces its own log file; e.g. Collars (Collars.log), From-To (FromToData.Log), All data (QAQC.log). If no problems are found you receive a message such as: "No problems were detected with the Dip-Azimuth Survey data."

To Run the QA/QC test:

1. On the *DH-Data* menu click **QA/QC**.
The *Drill Hole - QAQC tools* dialog is displayed.

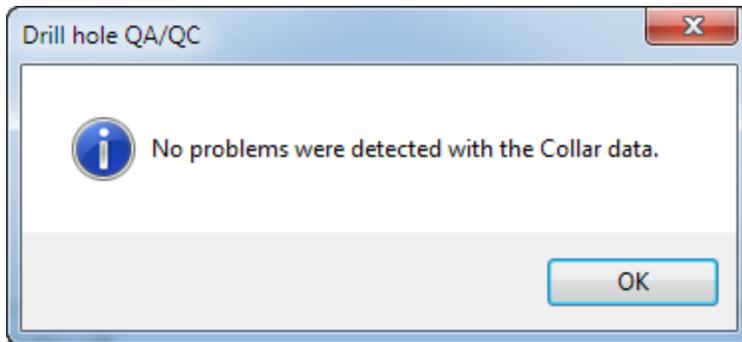


2. From the *Data Type to QAQC* dropdown list, select **All Data** to run the tests on all the data in your current project.

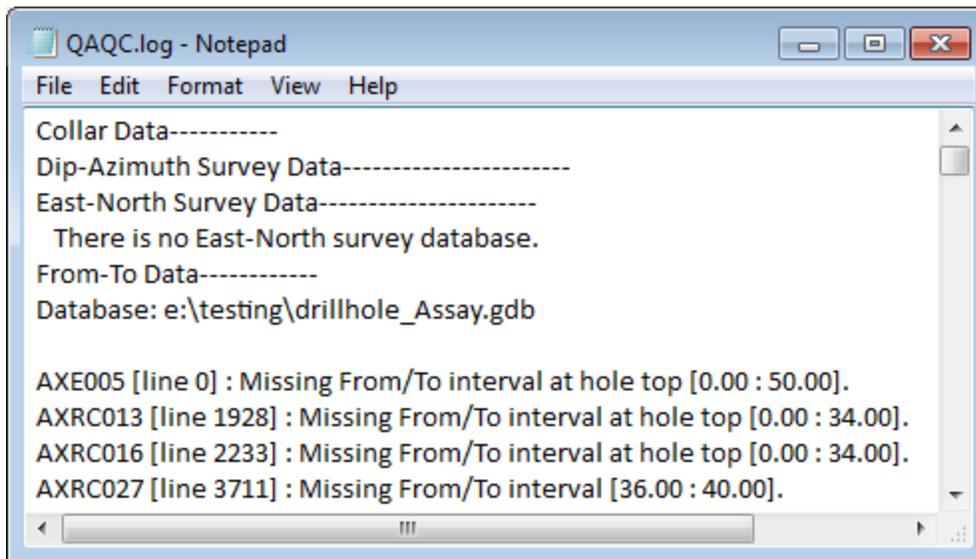


*For more information on the QA/QC tests, click the **Help** button on the *Drill Hole - QAQC tools* dialog.*

3. Using the *Hole selection* dropdown list, select to run the QA/QA tests on the *Selected holes*, *All holes* or to *Select holes from list*.
4. Click the **OK** button to run the test. If no errors are found the *Drill hole QA/QC* dialog will be displayed telling you that no problems were detected.



5. Otherwise a log will open listing the errors from each data type, as shown below.



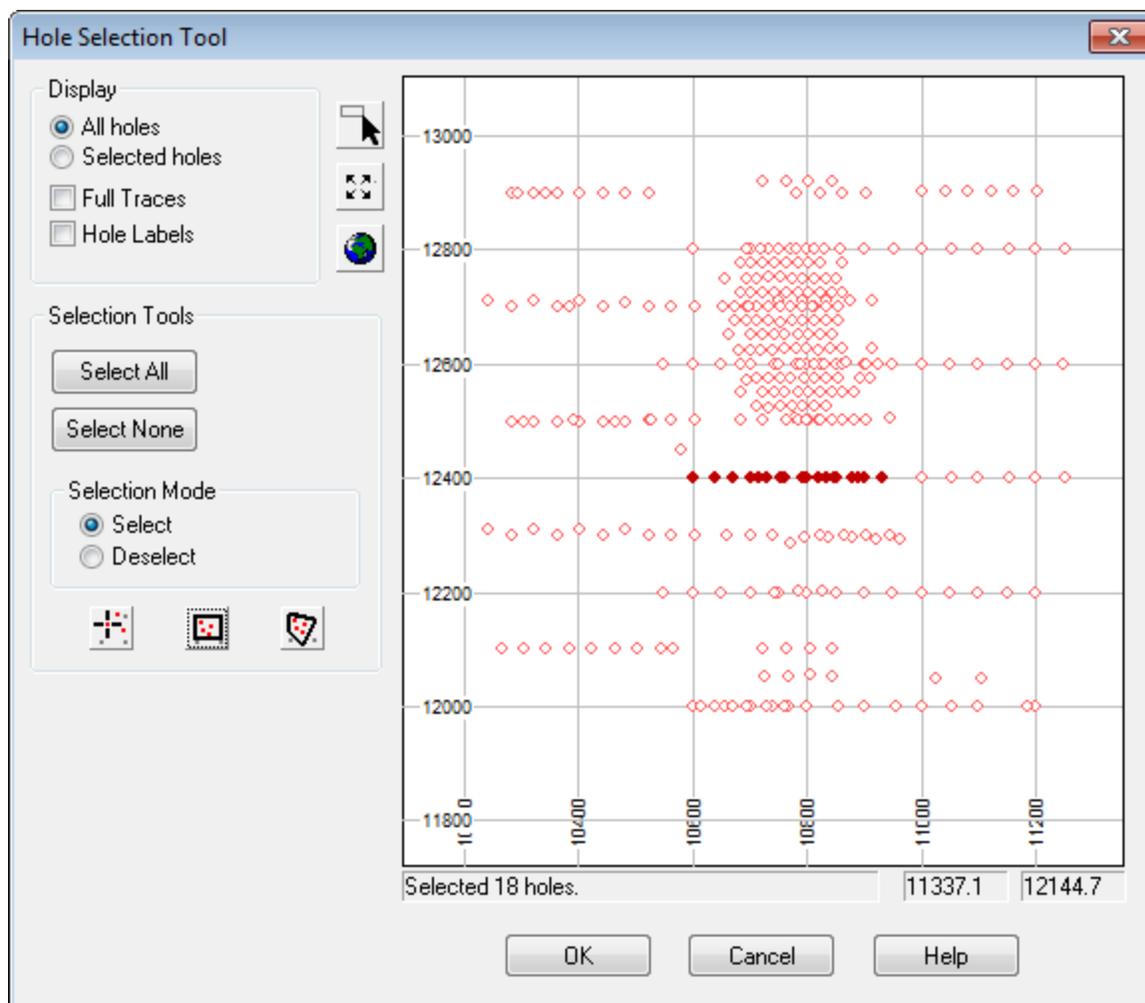
If you run this test on a data type that you do not have in your current project you will be prompted with the Drillhole QA/QC dialog telling you that no data of this type exists in the project.

Verifying Selected Drillholes

You might want to have only a select group of drillholes to run QA/QC tests on. There are a variety of methods available in the Target system to determine the holes selected. The *Hole Selection Tool* is one such method, found under the *DH-Plot|Select Holes* menu. For an explanation about the remaining methods, read the How-to Guide "Target Drillhole Mapping" found on the Geosoft web site (<http://www.geosoft.com>).

To Verify selected Drillholes with the Hole Selection Tool:

1. On the *DH-Plot* menu, select *Select holes* and then select the **Selection Tool**.
The *Hole Selection Tool* is displayed.



2. Using this tool you can verify that the holes from the correct location have been selected.
3. If additional holes need to be added or removed there are a number of methods for doing so using the Hole Selection Tool.



For more information, click the **Help** button on the Hole Selection Tool dialog.

Setting QA/QC Options

The Target system provides the tools enabling you to perform Quality Control and Quality Assurance tests on each of the five different data types (Collar Data, Dip/Azimuth Survey, Easting-Northing Survey, From-To Data, and Point Data).

The *Drill hole - QA/QC tools* dialog asks you to select the type of data to perform the QA/QC tests on. For each type there are a different set of options you can enable/disable using the **Options** button. All are enabled by default except the hole curvature test. This parameter requires you to specify a value for the curvature – if it is set to 0 or left blank the test doesn't run. The system saves the settings to the Advanced Settings file (*GX|Global Settings|Advanced*).

Each test produces its own log file; e.g. Collars (Collars.log), From-To (FromToData.Log), All data (QAQC.log). If no problems are found you receive a message such as: "No problems were detected with the Dip-Azimuth Survey data."

The following sections detail the QA/QC options available for each data type:

- QA/QC - Collar data options
- QA/QC - Dip-azimuth survey options
- QA/QC - East-North survey options
- QA/QC - From-To data options
- QA/QC - Point data options

To Set QA/QC Options

1. On the *DH-Data* menu, select **QA/QC**.
The *Drill Hole-QAQC tools* dialog appears.
2. Use the *Data Type to QAQC* dropdown list to select the data type you want to perform the QA/QC test on.
3. To access the list of options that the selected data type will use for testing, click the **Options** button.
The *QA/QC- * data options* dialog will be displayed. Depending on your selected data type, you will be presented with a list of QA/QC options.
4. Use the dropdown lists to select whether to perform that specific test on your data or not.
5. Once you have made any necessary modifications to your test options, click the **<Back** button to return to the *Drill hole - QAQC tools* dialog.
6. Click **OK** to run the QA/QC test. Your results will be presented in your current project.

Collar Data Options

The following table lists the options for the "Collar" data type.

Option	Description
Dummy East, North or RL	Values of East, North or RL that are dummy values are flagged.
Duplicated Locations	Duplicated collar locations are flagged. Though multiple holes can be drilled from the same collar, this may indicate a data entry error.
Reversed Easting/Northing	A simple test is performed on each collar location: The area covered by all the collars if each hole location (one at a time) is specified with Easting and Northings reversed is compared to the original area. This test succeeds because reversing the two values generally produces a location far away from the rest of the collars, and the total area covered by all the holes changes markedly. This test can break down if more than a single collar's Eastings and Northings are reversed.
Dip out of range -90 to 90	Dips outside this range (which are not dummies) are flagged. On import, dummy dips are set to 90 or -90, depending on the defined dip sign convention.
Azimuth out of range -360 to 360	Azimuths outside this range (which are not dummies) are flagged. On import, dummy azimuth values are set to 0.
Dip sign discrepancy	If a dip value has the opposite sign of the current dip convention, it is flagged. This would indicate a hole heading back to the surface.
Top of hole depth less than 0	While the collar may be located at a distance down the hole from the original "Top" value, it cannot be located before the start of the hole itself. This error is reported just once per hole in any single database.
Hole depth less than 0	The hole depth should be greater than or equal to 0. Hole depths in the range 0 to 1.0 are reset to 1.0 on import so that the start of the hole will plot on maps. This error is reported just once per hole in any single database.
Hole depth less than top of hole	The total depth of the hole must exceed the location of the start of the hole.

Dip-Azimuth Survey Options

The following table lists the options for the "Dip-azimuth survey" data type.



All are enabled by default except the hole curvature test. This parameter requires you to specify a value for the curvature -- if it is set to 0 or left blank the test doesn't run.

Option	Description
Dummy Depth	Values of depth that are dummy values are flagged.
Depth less than hole top	Values of depth less than the defined hole top depth are flagged. This error is reported just once per hole in any single database.
Depth greater than hole bottom	Values of depth greater than the defined hole bottom depth are flagged. The hole bottom depth is automatically reset to the maximum hole depth defined in the survey. This error is reported just once per hole in any single database.
Duplicated Depths	Duplicated depth values are flagged. Only one dip-azimuth value can be defined at a single depth.
Out-of-sequence Depths	Depths that decrease from the previous value are flagged. Depths should increase. Out-of-sequence depths may indicate an error in the depth values. In practice, depths are sorted before the hole is re-surveyed.
Dummy Dip or Azimuth	Flags dip or azimuth values which are undefined. The last dip and azimuth for a hole may be left undefined (dummy).
Dip out of range -90 to 90	Dips outside this range (which are not dummies) are flagged. On import, dummy dips are set to 90 or -90, depending on the defined dip sign convention.
Azimuth out of range -360 to 360	Azimuths outside this range (which are not dummies) are flagged. On import, dummy azimuth values are set to 0.
Dip sign discrepancy	If a dip value has the opposite sign of the current dip convention, it is flagged. This would indicate a hole heading back to the surface.
Max curvature - degrees per meter (or feet)	One indication of erroneous depth, dip or azimuth values is the "creation" of a hole that bends crazily at a certain location. Curvature is the mathematical description of how fast the borehole bends. If this value is left blank, or zero, no check is performed. A maximum of 10 degrees per meter means that it would be okay if the hole could be formed into a circle with a circumference of 36 meters.

East-North survey options

The following table lists the options for the "East-North survey" data type.



All are enabled by default except the hole curvature test. This parameter requires you to specify a value for the curvature – if it is set to 0 or left blank the test doesn't run.

Option	Description
Dummy East, North or RL	Values of East, North or RL that are dummy values are flagged.
Duplicated Locations	Duplicated depth values are flagged. Only one dip-azimuth value can be defined at a single depth.
Reversed Easting/Northing	A simple test is performed on each surveyed location: The horizontal (East-North) distance between successive hole locations is measured, then compared with the distance if the East and North values in the second location are reversed. This test succeeds because reversing the two values generally produces a location far away from the rest of the points, but has the opposite effect if the values were reversed to begin with. This test can break down if more than a single location's Eastings and Northings are reversed.
Broken trend in RL	Generally a descending hole continues to descend and an ascending hole continues to ascend. This test flags locations where the change in successive RL changes sign. This can occur legitimately when a hole passes through the horizontal, but normally occurs due to an error in the RL value.
Max curvature - degrees per meter (or feet)	One indication of erroneous east, north or RL h values is the "creation" of a hole that bends crazily at a certain location. Curvature is the mathematical description of how fast the borehole bends. If this value is left blank, or zero, no check is performed. A maximum of 10 degrees per meter means that it would be okay if the hole could be formed into a circle with a circumference of 36 meters.

From-To data options

The following table lists the options for the "From-To data" data type.

Option	Description
Dummy From or To	Values of depth that are dummy values are flagged.
From greater than To	Intervals are flagged if the "From" value is greater than the "To" value. Intervals cannot have negative thickness.
From equals To	Intervals are flagged if the "From" value is equal the "To" value. Some "Point" data sets are represented as From-To data sets with the From and To values equal, so this test is not always desired.
From or To less than hole top	No data can be plotted above the top of the surveyed hole. In practice, intervals are truncated to the top of the surveyed hole depth. This error is reported just once per hole in any single database.
From or To greater than hole bottom	No data can be plotted beyond the surveyed hole depth. In practice, intervals are truncated to the surveyed hole depth. This error is reported just once per hole in any single database.
Duplicated From-To intervals	Only a single data definition can exist for any given From-To interval, so duplicates will be ignored when plotting.
Out-of-sequence Depths	Depths that decrease from the previous value are flagged. Depths should increase. Out-of-sequence intervals may indicate an error in the depth values. In practice, intervals are sorted before plotting.
Overlapping intervals	Intervals are flagged if they overlap with the previous interval. The "From" of the second interval must be greater than or equal the "To" of the previous interval.
Missing intervals	Intervals where the "From" value is greater than the previous interval's "To" value are flagged. In practice, this situation is often valid. Its presence in data that is supposed to be "complete" in depth may indicate an error in one of the "From" or "To" values.
Duplicated sample numbers	In some data sets, such as geochemical data, each measurement is identified with a unique sample number or code. This test looks for duplicated sample numbers (codes).

Point data options

The following table lists the options for the "Point data" data type.

Option	Description
Dummy Depth	Values of depth that are dummy values are flagged.
Depth less than hole top	No data can be plotted above the top of the surveyed hole. In practice, intervals are truncated to the top of the surveyed hole depth. This error is reported just once per hole in any single database.
Depth greater than hole bottom	No data can be plotted beyond the surveyed hole depth. In practice, intervals are truncated to the surveyed hole depth. This error is reported just once per hole in any single database.
Duplicated Depths	Only a single data definition can exist for any given depth, so duplicates will be ignored when plotting.
Out-of-sequence Depths	Depths that decrease from the previous value are flagged. Depths should increase. Out-of-sequence depths may indicate an error in the depth values. In practice, data are sorted by depth before plotting.
Duplicated sample numbers	In some data sets, such as geochemical data, each measurement is identified with a unique sample number or code. This test looks for duplicated sample numbers (codes).

How-To Guide Publication Date: 29/04/2014

Copyright 2014 Geosoft Inc. All rights reserved.