Data Collection using Trimble GPS:

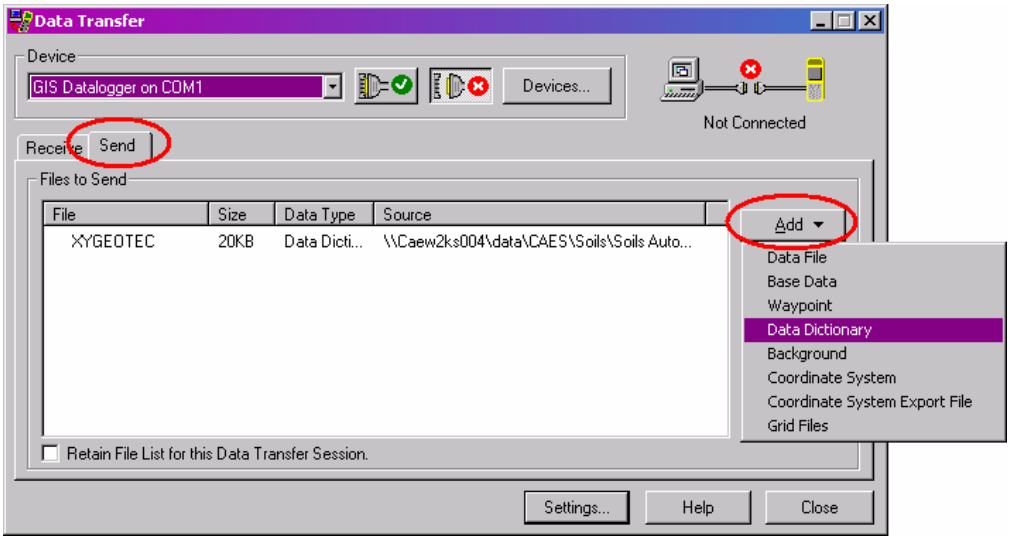
TSC1 Data Collector

To collect Mn/DOT soils data, our soils crews have been using Trimble's PRO-XR with the TSC1 Data Collector. There's also a data dictionary that was created by the CAES Office that can be imported onto the TSC1 to collect the soils data. This data is collected in the field and then brought into the office where it is downloaded and exported into a comma-delimited file.

There's a macro that was written in Textpad to clean up these comma-delimited files so that GeoTech will read in the data easily. After the file has been cleaned up, one of the design files can be opened and GeoTech can be used to place the borings onto the CAD files.

Uploading the Data Dictionary:

First, open PathFinder Office. This software will allow you to send and receive data from the TSC1 data collector (as shown above). You may accomplish this by going to the **Utilities** menu and choosing **Data Transfer…**. Choose the **Send** tab and click on the **Add** button on the right. This is where you can choose to add a **Data Dictionary**. When you click on **Data Dictionary**, another window will pop up and allow you to choose which data dictionary you want to upload to the data collector. Then click the **Transfer All** button to transfer your data dictionary.

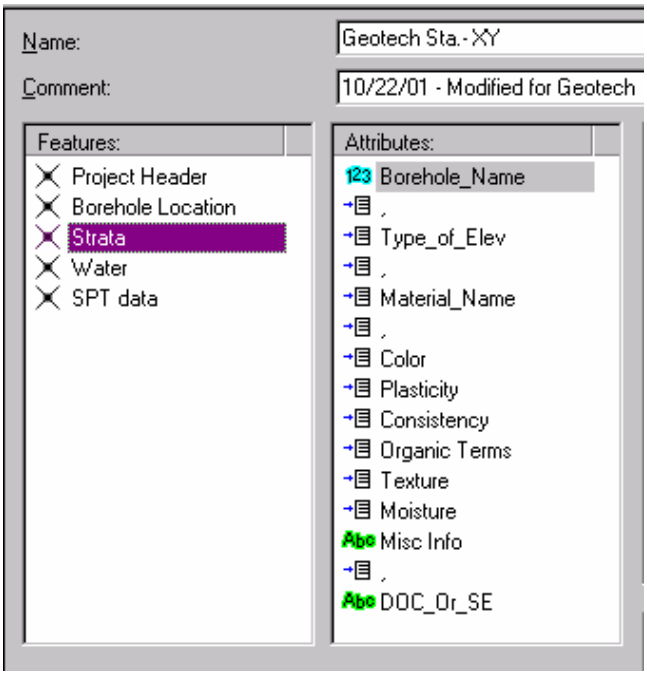


After the uploading is complete, you may close out of the Data Transfer window.

Collecting the Data in the Field:

When you're ready to start collecting data you must first start a new rover file. By choosing Data Collection from the main menu of the TSC1 will leave you the option of starting a new rover file or allow you to open an existing rover file that's already been created. *Note – You can only add data to a rover file that's less than a week old. You should now be in the Data Collection menu, now choose Create New File. This will start a new rover file for you.

GeoTech's Data Dictionary



There are two data dictionaries that can be used to collect soils data. One is setup to collect station and offset and the other is setup to collect only the XY coordinate.

First, fill out the **Project Header** feature once per file.

Project Number – SP Number
Beginning Borehole – Beginning Borehole Number
Ending Borehole – Ending Borehole Number
Starting Date – Starting Date of Drilling
Ending Date – Ending Date of Drilling
Field Crew – Crew Chief and Assistants
Unit Number – Auger Unit Number
Remarks – Project Remarks

Borehole Location:

Borehole_Name – Borehole Name or Number
Description – Borehole description to help identify any unique items about that particular borehole.
Feature – Type of Auger being used.
Elevation – This allows us to choose between using a *.tin for our Z coordinate and using what is being collected as our Z coordinate by the PRO-XR.

Strata:

Borehole_Name – You'll need to enter the number for the borehole on the first strata only. Every strata that is in the same borehole can be left at the default number (default number = 0). The zero tells GEOPAK to look at the previous borehole number.
Type_of_Elev – Leave at default (DOC – Depth of Cover)
Material Name – Material Name
Color – Color
Plasticity – Plasticity
Consistency – Consistency
Organic Terms – Organic Terms

Texture – Texture
Moisture – Moisture
Misc Info – Miscellaneous Information
DOC_Or_SE – (Depth of cover or strata elevation) – Enter in the depth of your strata.

Water:

Borehole_Name – Borehole Number
Water_Elev_0 – Enter in the depth of your Water Elevation.
Water_Elev_Type –

SPT Data:

Borehole_Name – Borehole Number
DOC_Or_SE – (Depth of cover or strata elevation) – Enter in the depth of your strata.
Type_Of_Elev – Leave at default (DOC – Depth of Cover)
Total_Count – Total Blow Count

Downloading Information to the Computer:

Once the soils information is collected, it's then brought into the office where it is downloaded and opened in PathFinder Office. The data can be downloaded from the data collector under the **Utilities** menu and select **Data Transfer…** (this is the same method as uploading the data dictionary).

With the file now downloaded to the computer, you can differentially correct your *.ssf file. This is done under the **Utilities** menu and selecting **Differential Correction…**.

When the file is open, review the data to verify if this is the data that was collected. If all of the data looks correct, then export the data out of PathFinder Office. This can be done under the **Utilities** menu and select **Export…**. There will be an export setup already created for you, select that setup and export your file. *Note – Make sure that when exporting the proper county coordinates are used. The CAD files that are received from design will be in county coordinates, so make sure that the coordinates match.

Using Textpad to re-arrange data for GeoTech:

Open "Textpad" and run the macro called "**GeoTech Import XY**". This macro is setup to read the files that were exported from PathFinder Office and generate the files that GeoTech can import.