Surveying Tips and FAQ

Tips for Collecting Elevation Data

- **Use a vehicle where the GPS-to-ground offset will remain constant (such as a tractor, truck, or ATV – not a harvester or self-propelled sprayer that will shift vertically depending on load).**
- **If the field you are surveying has wheel ruts, either stay in them or stay out of them. Do not alternate between them.**
- **Do not survey in fields where there will be variable wheel sinkage – ie., if part of the field is wet and part is dry.**
- **Trace the course of any waterways and banks you want to include in the elevation model. Drive the centerlines of such features, and also drive the shoulders.**
- **Ensure that your base station is within 1.5 miles (2.4 km) of the area you are surveying.**
- **Areas that exhibit a rapid change in slope will need to be surveyed more intensely (closer swatch widths)**
- **Survey at a slow enough speed so the vehicle does not rock or bounce measurably.**
- **If you are using an implement based receiver to survey with, DO NOT alter the elevation of the implement while surveying. If using a scraper mounted receiver, raise the blade to full height**

before starting the survey and leave it at this position for the duration of the survey.

- **Save your data as often as necessary. Consider how long it would take to re-do the work you would lose if your computer crashed at any point in the survey.**
- **Use markers to set benchmark height/control points.**
- **Collect elevation data on 30-50ft (9-15m) passes (no more than 80ft/24m). Complete more passes in areas of the field with detailed terrain.**
- **Try not to double survey areas. Use the pause button to skip over the already surveyed area before recommencing.**
- **Drop markers as required.**
- **Points are logged once every 2 meters (6.6 feet). The data received between these points will be averaged. This reduces the effect of noisy GPS (bumpy ground or bouncy implements).**
- **Preferably use 5Hz, as it will allow us to better compensate for noisy data.**

Surveying FAQ

Q: **Why are there gaps in the GPS surveyed data?**

A: This can be caused because the GPS has stopped transmitting (check the connection) or it can be that the user has hit “Pause” or “Stop” on the T3RRA Display. Pausing can be used when one needs to stop surveying for a time and then resume from the same point. (i.e., for a lunch break)

Q: **Are there any limits on logged data?**

A: **We will only record a data point once every 2 meters (6.6 feet). Any data received that's less than 2m from the last logged point will be averaged into one record.**

Q: **What do we mean when we say we "average" the collected data into one record?**

A: **If we receive a GPS read every 50cm, we get 4 GPS reads every 2 meters. We take all of those data points and average their position (latitude and longitude) and their elevation to produce the dropped point. This allows us to compensate for the fact that the surface can be quite rough when surveying.**

Q: **Why does the logged point always appear about 1m behind the tractor?**

A: **This is because of the averaging. As we average the position as well as the elevation it will drop ½ the collection distance behind the tractor.**