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## Standard Operating Procedure 2: Navigation Using a Trimble GPS Unit

### Version 1.00 (12/27/2016)

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# Standard Operating Procedure 2: Navigation Using a Trimble GPS Unit

## Waypoint Files

Three waypoint files were created for navigation in support of this protocol:

1. Monitoring well locations
2. Centroids of intensively-assessed wetlands
3. Centroids of rapidly-assessed wetlands

## Navigate in the Field

1. Turn on Yuma 2 for satellite signal.
2. Open *TerraSync* from the main menu.
3. Use the drop down-box in the upper right hand corner to select *Navigate*.
4. Select *Waypoints* (Figure 2.1) from the drop down menu and select the appropriate waypoint files (Survey Sites, Sentinel Sites, ORAMs, Monitoring Wells).
5. Click on the feature of interest, making sure the box is checked next to the number and highlighted in blue.
6. Click the *Option* tab also located in the top-right hand corner of the screen.
7. Click *Set Nav Target* (Figure 2.2).
8. Note: If the site is properly selected, there will be an icon with two flags crossed next to the highlighted waypoint (Figure 2.3).
9. Next click on the *Waypoint* tab, this time selecting *Navigate*.
10. Note: This will now show a circle with a small stationary arrow pointing north and a moving arrow that tells you which direction to head.
11. Note: The main screen can be used to toggle between the map, data, navigation, status, and setup toolbars. The *Map* view is the most helpful for navigation (Figure 2.3). If *Map* is selected, a drop-down box is available to select, zoom in, zoom out, pan, digitize and measure on the screen.
12. Note: Another important feature in this section is distance, which is represented by *dist.*, which indicates the distance to the selected waypoint in feet.
13. To select another waypoint, clear previous navigation targets by selecting the *Waypoints* drop-down box then *Clear Nav Targets* from the *Options* drop-down box (Figure 2.4). Notice the waypoint will still be selected in both the Survey Sites file as well as on the map but the *Navigate* tool is no longer in progress.
14. Uncheck the previous waypoint, check the desired waypoint and make sure it is highlighted, then click *Options*, *Set Nav Targets*.
15. Finally, click on *Waypoints* drop-down box and select *Navigate*.
16. Note: To activate the compass, click on the windows start icon, *All programs*, *STMicroelectronics* folder, then select *Sensor Control Application*. A compass will be displayed in the middle of the screen. It can be dragged to the lower right-hand corner over the satellite signal display. The compass works best when the worker is moving.

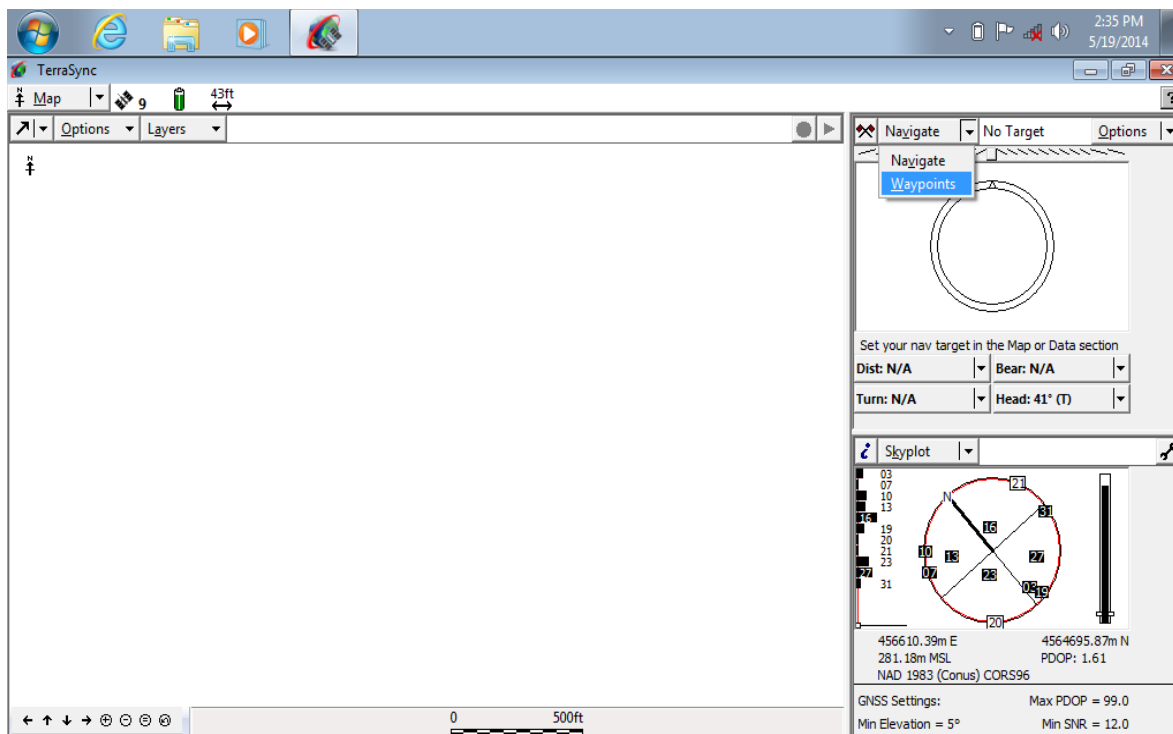


**Figure 2.1.** Screen capture of survey site selection while navigating using Trimble Yuma 2.

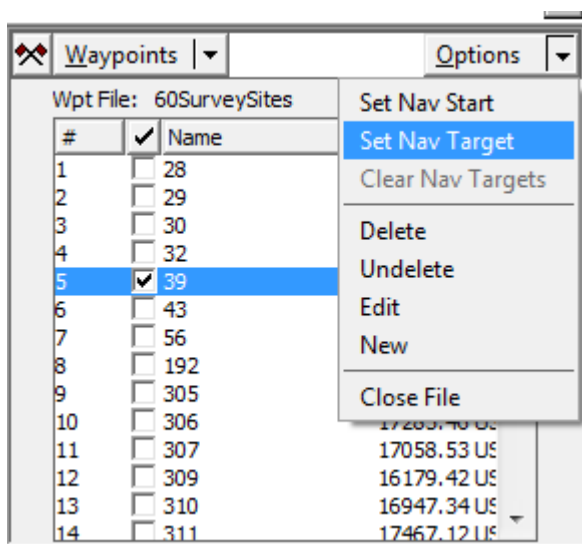


**Figure 2.2.** Set navigation target by selecting the waypoint and clicking *Set Nav Target*.

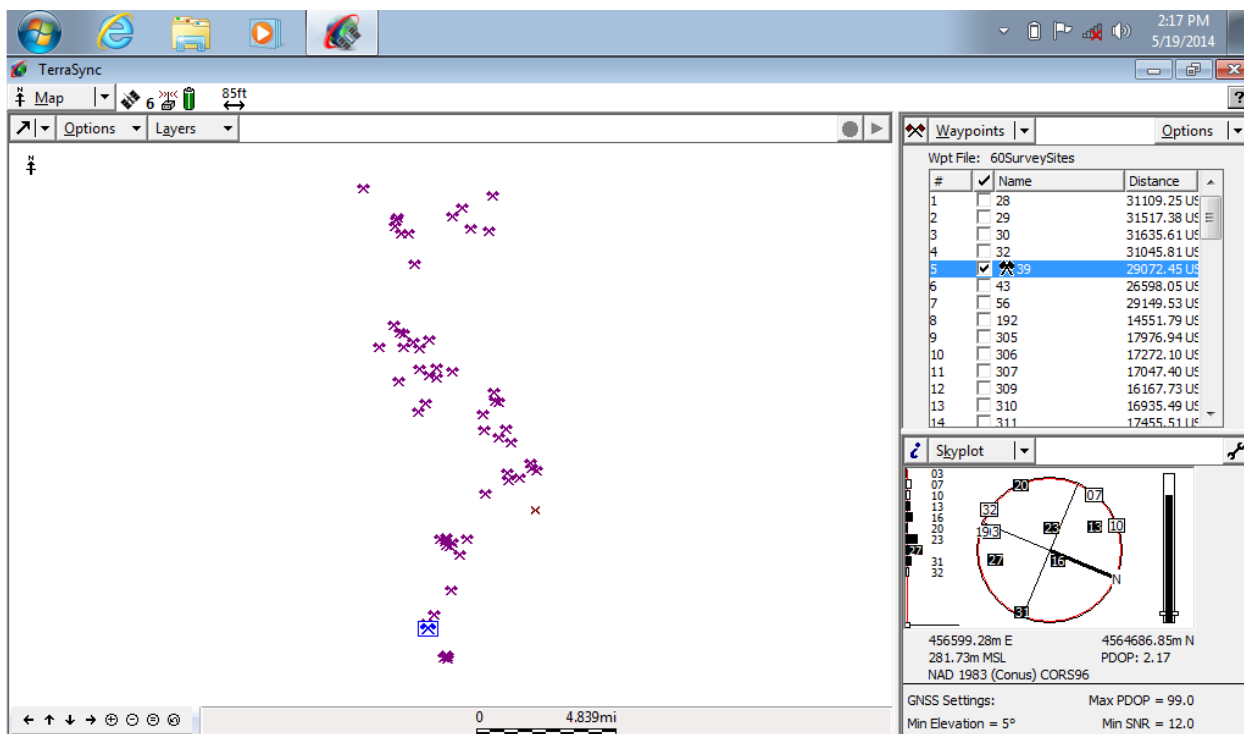


**Figure 2.3.** Map view showing all available waypoints. Point 39 is set as the navigation target, which is located a distance of 29072.45 feet from our current location.

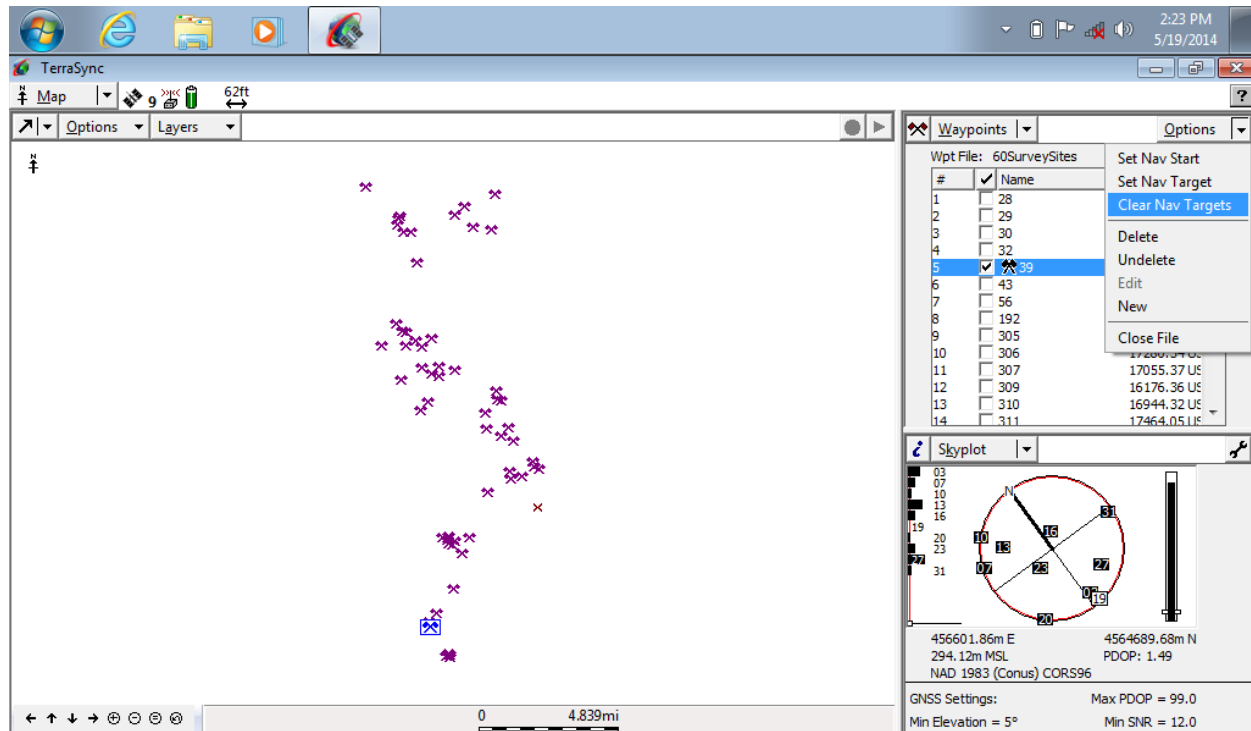


**Figure 2.4.** Clear old navigation targets in the waypoints drop-down box before navigating to a new location.