

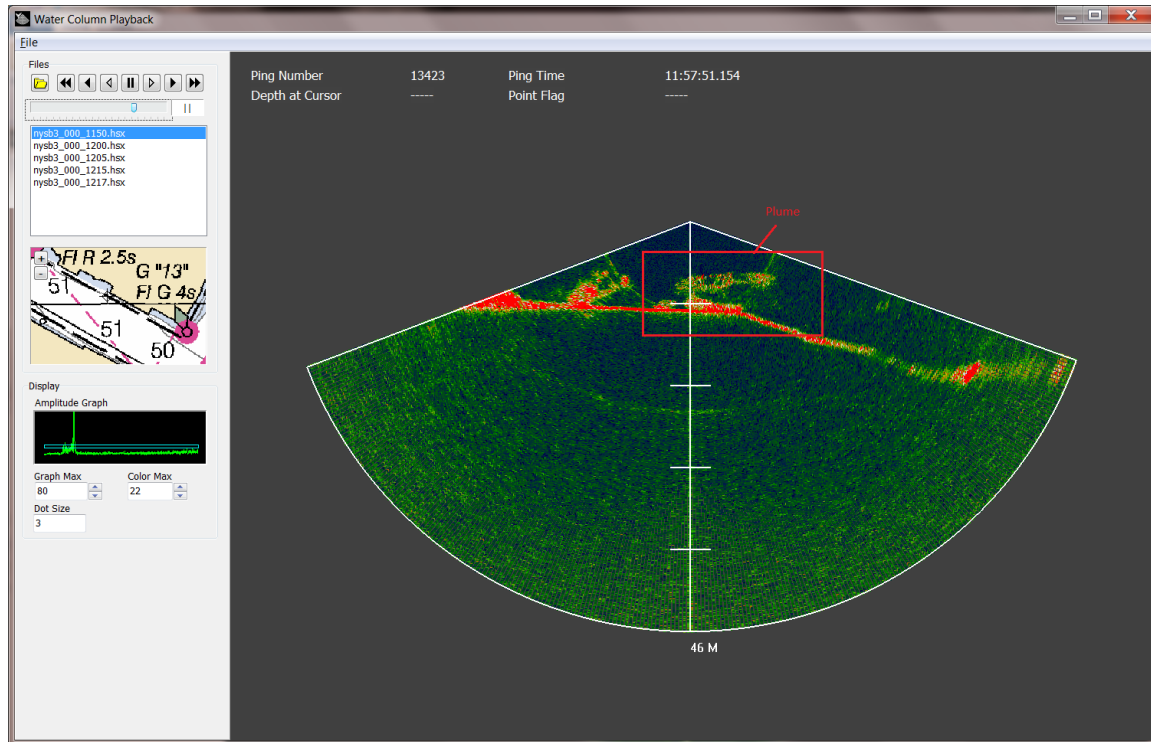


R2Sonic Water Column in HYSWEEP

By Mike Kalmbach

This image is from our water column playback program. It shows R2Sonic MBES data collected in New York last week. There's an interesting plume of some sort which we haven't been able to identify. Silt? School of fish? Noxious seep of some sort? There's plenty of good information in the water column.

FIGURE 1. *Water Column Playback*

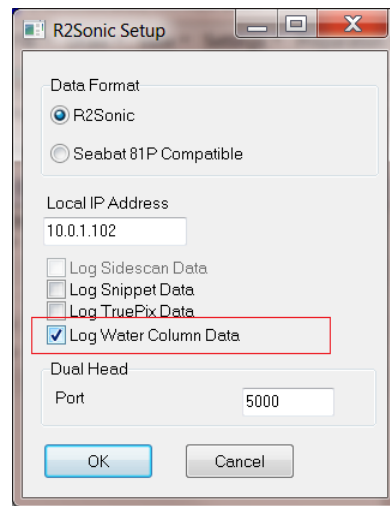


Water column in HYPACK® / HYSWEEP® requires R2Sonic or Seabat multibeam sonar. (We plan to add drivers in the future but that's what we have now.) Plus the HYSWEEP® programs, which will be available in HYPACK® 2015. As the recent survey used R2Sonic we will concentrate on that. Read on for a brief description of setup, logging and post processing.

SETUP

Setup in HYPACK® is quite easy (figure 2). Just check "Log Water Column Data" in R2Sonic setup.

FIGURE 2. Enable water column logging in R2Sonic driver setup.



Figures 3 and 4 show setup in the R2Sonic controller.

FIGURE 3. R2Sonic water column enable.

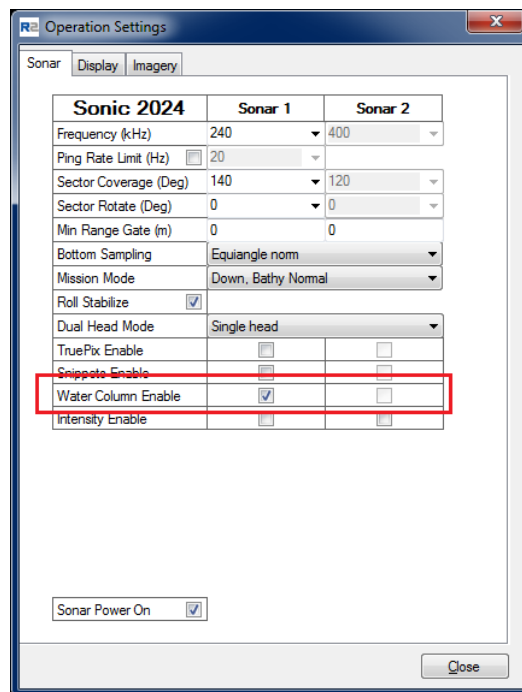
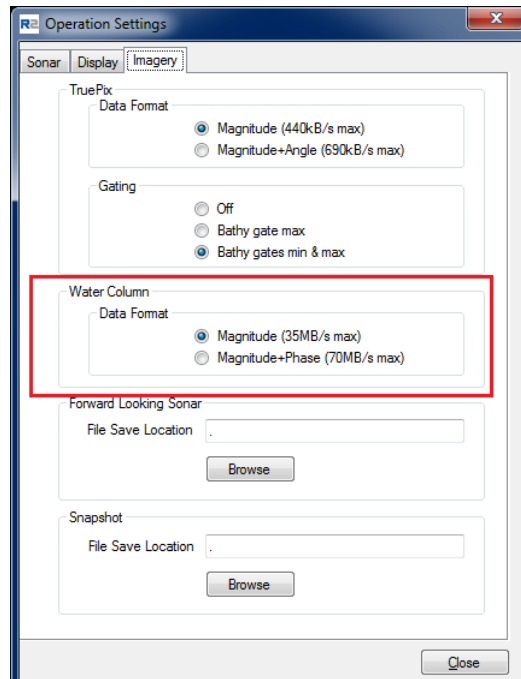


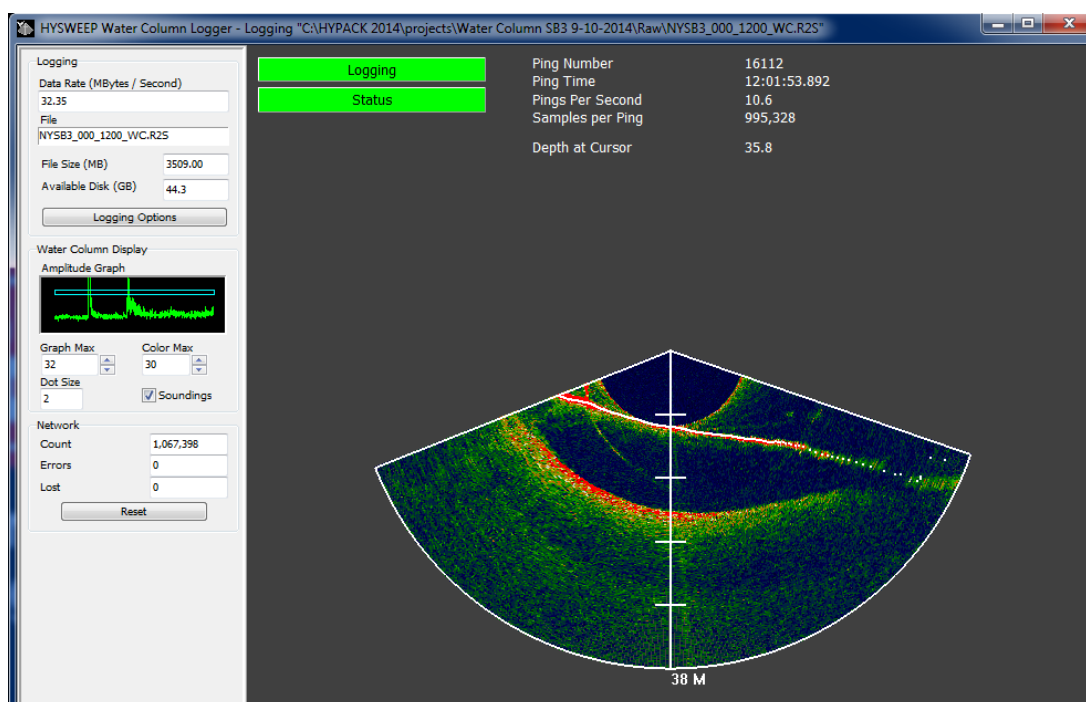
FIGURE 4. R2Sonic format select. Always use Magnitude when interfacing with HYPACK®. Magnitude + Phase will not work.



LOGGING DATA

The logging program (figure 5) runs when HYPACK® + HYSWEEP® survey are run with water column enabled. Looks similar to the playback program at top, and it is.

FIGURE 5. Figure 5: HYSWEEP Water Column Logger.



Water column data is big! Data rate of 32.35 megabytes per second in test survey. That's 1.9 gigabytes per minute and 116 gigabytes per hour. Clearly you will need a lot of disk to log all that.

There's an *on demand* logging mode that makes storage requirements more reasonable. During survey most of the water column is, well, water. Nothing interesting. No need to log that. If you are willing to watch the screen you can limit logging to when things are interesting. Or you can survey without logging the water column and go back for details in target areas.

PLAYBACK

Playback allows you to view data in a comfortable office environment. Or an uncomfortable field office. Or a pitching and rolling boat. Anywhere you have HYPACK®.

Media player style controls go forward and reverse at various speeds. A small chart display geo-references the data. A couple of targeting methods will allow areas of interest to be flagged for further exam in our MBMAX64 (64-bit HYSWEEP® EDITOR).

MBMAX64

This part isn't finished yet. At minimum it will provide our water column display with overlay of digitized soundings. You will be able to re-digitize soundings much like the echogram in single beam editing. There will likely be more but it's a work in progress that hasn't been fully defined.

Display and digitizing will definitely be included in HYPACK® 2015.