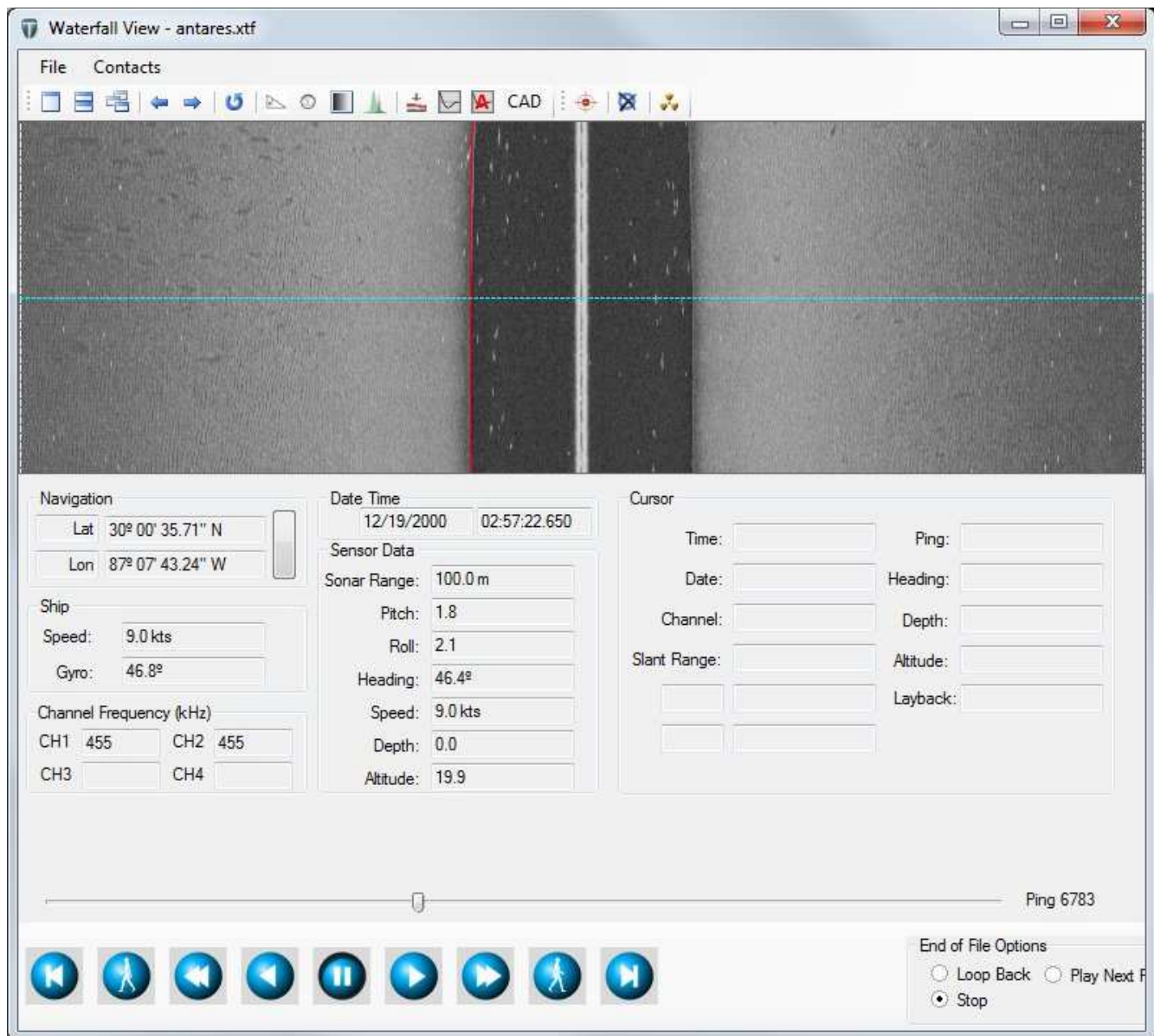


Using the Auto TVG feature

The Perspective Auto TVG feature uses Adaptive Normalization to apply a corrective TVG curve to the Side Scan data - the curve can then be saved and applied to the mosaic. The operation to generate the curve is done within the Perspective Waterfall display.

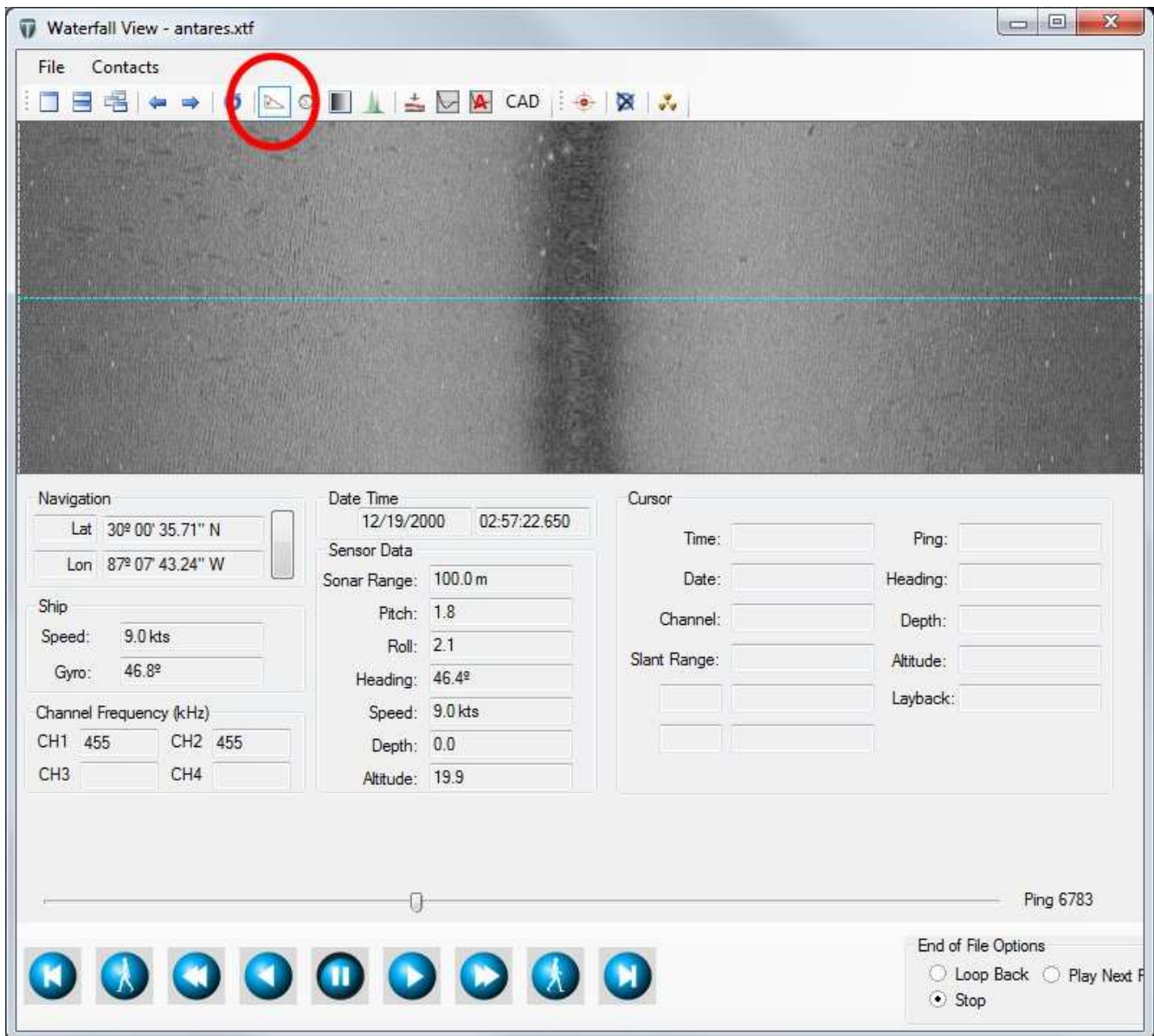
Procedure

Import an XTF file that contains Side Scan data into Perspective, wait for the Navigation track to be drawn and dismiss the Mosaic Wizard. Double click the line in the Map view to open the Side Scan waterfall window:



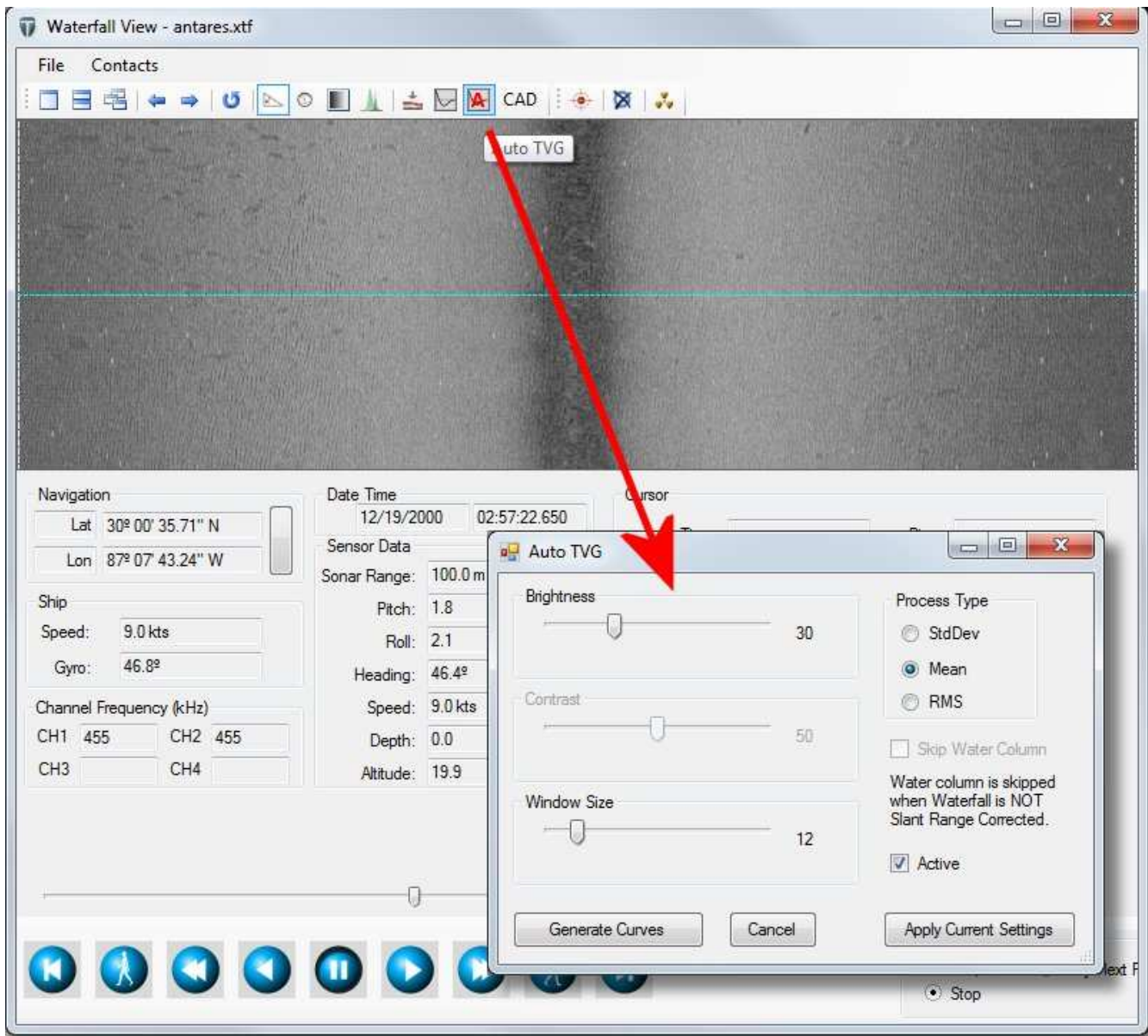
It is important that an area of smooth seabed is chosen, strong reflectors will cause distortion of the curve resulting in along-track stripes of high and low gain artifacts in the mosaic. If the data have not been bottom tracked you should do that first.

Turn on slant range correction:



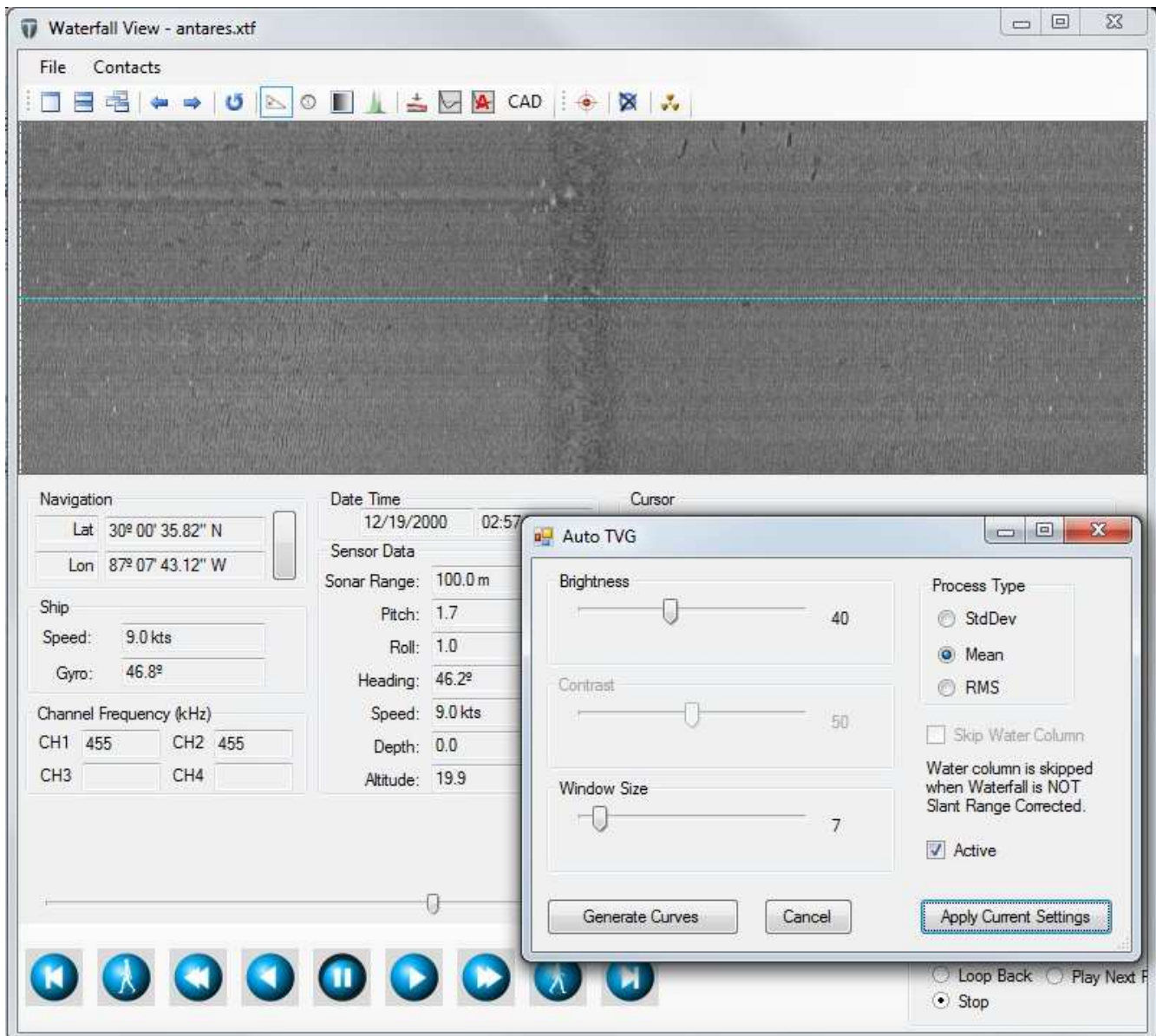
In the example note the stronger returns directly below the towfish and towards the edges of the swath.

Click the **Auto TVG** button:



There are a number of different options available in this dialog box, however the default settings have been used successfully with many different types of sonar data, specifically the **Mean** option works best (feel free to experiment with the other options)

The **Brightness** and **Contrast** sliders are self-explanatory, **Window Size** adjusts how quickly the gain is allowed to change in the across-track direction (effectively the steepness of the resulting TVG curve) small values allow for more rapid changes, in this example the Brightness was adjusted to 40 and the Window size to 7:



To see the effect of the changes click **Apply Current Settings** note that the image may have across track stripes of higher and lower gain at this point - this is normal and is caused by each individual ping of data having a slightly different TVG gain curve applied, when the TVG Curve is computed the gain is averaged.

When the image has been adjusted to your satisfaction click **Generate Curves**:

The screenshot shows the 'Waterfall View - antares.xtf' application window. The main display area is a dark waterfall plot. Below it, there are several data panels:

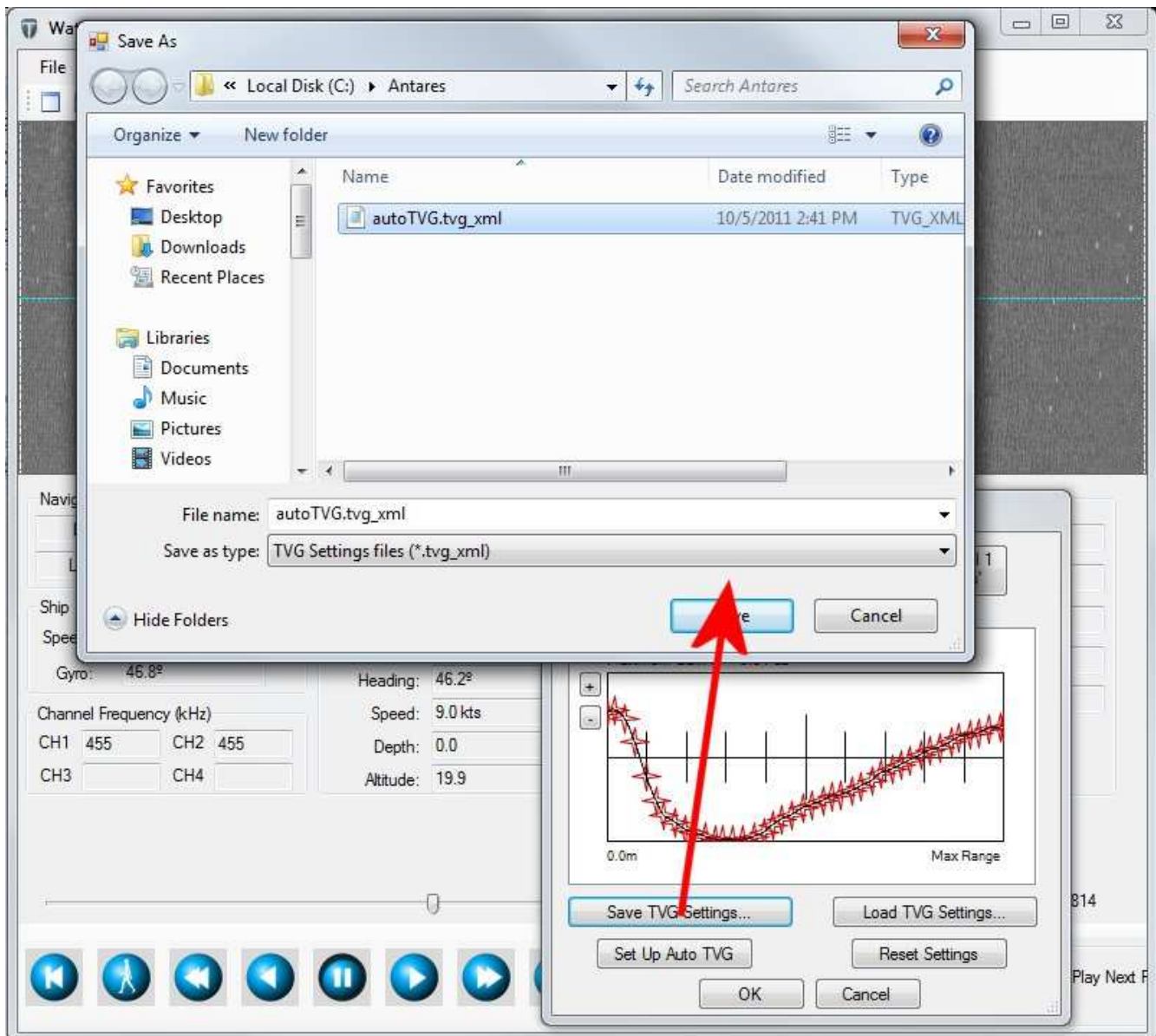
- Navigation:** Lat 30° 00' 35.82" N, Lon 87° 07' 43.12" W
- Date Time:** 12/19/2000 02:57:24
- Sensor Data:** Sonar Range: 100.0 m, Pitch: 1.7, Roll: 1.0, Heading: 46.2°, Speed: 9.0 kts, Depth: 0.0, Altitude: 19.9
- Ship:** Speed: 9.0 kts, Gyro: 46.8°
- Channel Frequency (kHz):** CH1 455, CH2 455, CH3, CH4

The 'TVG Settings' dialog box is open, showing the following options:

- Apply to All Channels...
- Set for Individual Channels....
-
- Channel 1 | Channel 2 | Channel 3 | Channel 4
- Maximum Gain : 5.51 db
- A graph showing a TVG curve with gain stripes.
-
-
-

TVG curves for each Side Scan Sonar channel are generated and the correction applied to the waterfall display, note that the gain stripes have disappeared. The display now shows how the data will appear in the mosaic, cycle through the channels to see the different TVG curves for each channel. You may also force one channel to be the setting for all channels, this is useful when its only possible to find a usable smooth seabed return on one of the channels.

Save the settings to a TVG_xml file:



During the creation of the mosaic use the **Edit TVG Curve** button to select the correct tvg_xml file:

