SLB VSI polarity convention

An upward motion of the Z-axis (vertical) geophone accelerometer in the sensor package of a VSI shuttle produces a positive voltage break at surface on the VSI Workbench. The X- and Y-axes should follow a similar convention.

This positive voltage break at surface should be:

- Recorded as a positive number to the VSI LDF file
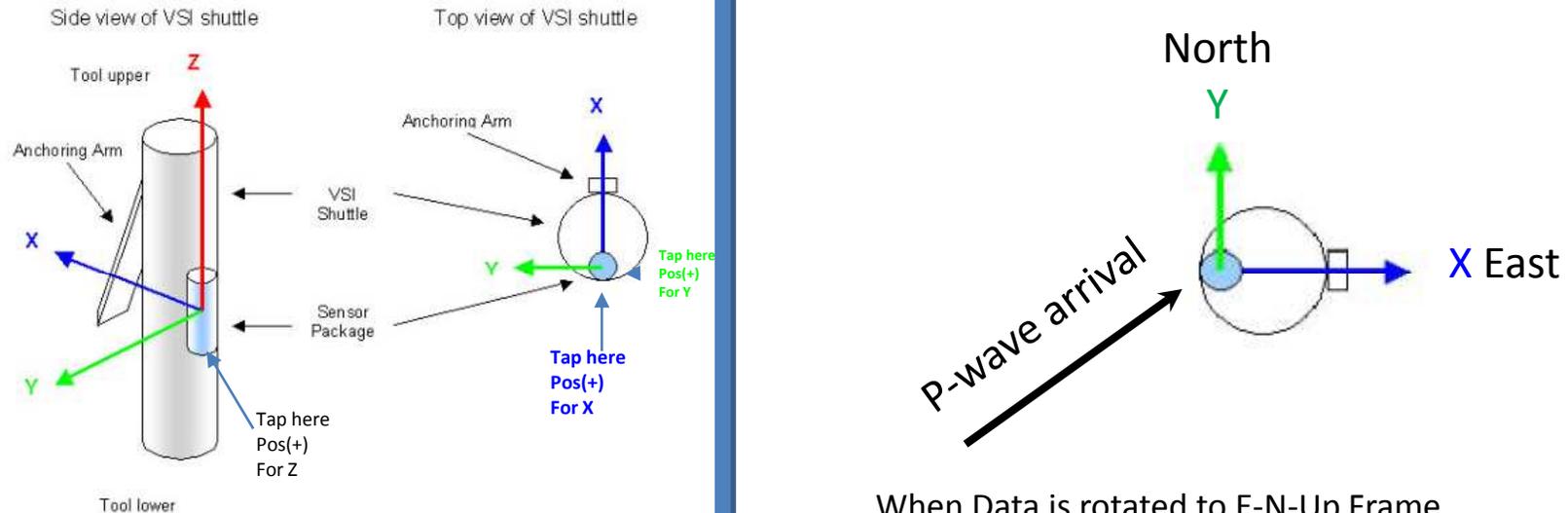- Displayed as an "up" break on the VSI Workbench screen

Side view of VSI shuttle | Top view of VSI shuttle

Z
Tool upper
Anchoring Arm
X
VSI Shuttle
Anchoring Arm
X
Sensor Package
Y
Tap here Pos(+) For Y
Y
Tap here Pos(+) For X
Tap here Pos(+) For Z
Tool lower

Figure 8-38: VSI shuttle views

Figure 8-38: Sensor package showing the three orthogonal GAC sensors aligned at 90° to each other along the X-, Y- and Z-axes

The arrows indicate the X-, Y- and Z-axes of the sensor package. The arrows on the sensor package point in the direction of the sensor acceleration when the package is tapped (acceleration/motion of the sensor package), the +X, +Y, +Z directions, which produces a positive voltage and positive number recorded on the VSI Workbench acquisition system.

East-North-Up Frame
Top View of VSI Shuttle

North
Y

X East

P-wave arrival

When Data is rotated to E-N-Up Frame

P-wave arrival coming from below the receiver and from a south-west azimuth will give a positive polarity arrival on all components.