Alan Ehrlich

From: Keith Rosindell [rosindell1@calgary.westerngeco.slb.com]
Sent: Wednesday, March 05, 2003 4:21 PM
To: Alan Ehrlich
Cc: 'Derek Melton'
Subject: Alternative source configuration. Mackenzie River 2-D.

Alan.

As mentioned in the WesternGeco Environmental Assessment for the proposed 2003 Mackenzie and Liard Rivers 2D Seismic Program, there is a possibility that WesternGeco may decrease the amount of equipment they have proposed using for this program. (see Section 5.1.5 Alternative Source Configuration.)

WesternGeco have now been able to look at the processed data produced during the 2002 Test Program, and the introduction of the second source vessel (the NT Marjory) is not enhancing the quality of the data as expected. It has proven more difficult than expected to keep both vessels following the same track line in the river. The cable is in different positions once we align source points from each vessel in relationship to the receiver groups, when the cable is going around bends in the river. This results in the " smearing " of data over several receiver positions, which in turn degrades the quality of the data. Using two source vessels to produce longer offsets would normally be geophysical desirable, and would under normal circumstances improve data quality, but the shorter offsets produced by a single source vessel is looking better than the smeared data from the twin source vessels.

WesternGeco has looked into ways of reducing the smear through meetings with the WesternGeco Operations Team, discussing the problem with NTCL river Captains, and sending navigation data to experts in Australia who tried to correct the positioning issue. But it is now the general consensus within WesternGeco to discontinue using the second source vessel; this will shorten the offsets and reduce the quality of data at depth. However, this is more favorable than smeared data sets.

Reducing the source will of course remove the need for a second source vessel, putting less traffic on the river. It will also reduce the number of staff needed to operate the equipment. All shooting parameters, shot point intervals and cable lengths would stay the same as the proposed twin boat survey. The shot point interval for the twin boat shoot would have been approximately 9 to 10 seconds by firing the air guns alternatively at 18 to 20 seconds per vessel. When the source is reduced to one source vessel the shot point interval will stay at 9 to 10 seconds by firing the single source every 9 to 10 seconds. During the fish cage studies last season a single source was used, firing at a 10 second time interval. Reducing the Seismic Program to a single source would therefore bring the seismic program more in line with the test program. (See WesternGeco Fish Behavioural Study Appendix III section 3.3.4.2)

Regards

Keith

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