

SCG063-P09

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Seismic reflection and gravity survey across the Eastern Boundary Fault Zone of Ishikari Lowland, Hokkaido; Line 1

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The Eastern Boundary Fault Zone of Ishikari Plain is a zone of North-South trending reverse faults, which border the eastern margin of Ishikari lowland with length of about 65 km length. Active faulting on the Eastern Boundary Fault Zone of Ishikari Lowland shows the latest faulting of Hidaka fold-and-thrust belt that is collision between the Northeast Japan arc and fore-arc sliver of Kuril arc, which is driven by oblique subduction of Pacific plate.

To reveal the subsurface structure of the Eastern Boundary Fault Zone of Ishikari Lowland, we carried out two lines of seismic reflection and gravity survey in November 2010. Seismic line 1 has a length of 19.2 km and started from Hayakita-midorigaoka in Abira town to Kashihara in Tomakomai city along Rout 234. Seismic line 2 has a length of 8.8 km and started from Kashiwadai-minami in Chitose city toward the direction of ENE through the Higashi-chitose Self Defense Force military station. The source used in this seismic survey was a vibrator (Y-2400; IVI Inc.). The receiver was SG-10 (natural frequency, 10 Hz; Sercel Inc.). The source and receiver spacing was 10 m, with 240-ch geophones used for each recording. We selected the DSS-12 (Suncoch Consultants Co., Ltd) for the recording system and its sampling rate is 2 msec. Spacing of each gravity stations along seismic lines and its extension is 250 m standard. We applied D-type gravity meter of LaCoste & Romberg (D-205). To acquire the global position of each gravity station and its altitude, we used Trimble R8 GPS system. 79 gravity stations along Line 1 and its extension and 61 gravity stations along Line2 and its extension were measured in this survey. In this presentation, we focus on the result of seismic and gravity survey along Line 1.

We would like to thank Higashi-chitose Self Defense Force, Abira town office, Tomakomai city office, and Hokkaido Regional Development Bureau for their cooperation.

Keywords: seismic reflection profiling, gravity survey, the Eastern Boundary Fault Zone of Ishikari Lowland, Umaoi Hills, sub-surface structure