Birds Hill Project: Seismic Refraction Survey

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Group 1 performed three forward and reversed seismic refraction soundings at Site 1 (Overlook) in Birds Hill, Manitoba. The Overlook is located right off of North Drive (Figure 1) and the UTM coordinates associated with the Overlook is 14U65950E, 5542850N.

The map area of the survey and the two separate seismic lines are outlined on Figure 2. Line 1 had an azimuth of N27◦W, and is connected by the points X1 and X2. X1 is defined by the UTM coordinates of 14U0651903E, 5542970N and X2 having 14U0651920E, 5542920N. Line 2 had an azimuth of N63◦E, and is connected by the points X3 and X4. X3 is defined by the UTM coordinates of 14U0651912E, 5542942N and X4 having 14U0651936E, 5542950N. The error on the coordinates is approximately $\pm 5 m$.

The first refraction survey was completed on Line 1 and had a length of 25 m. The second refraction survey was also completed on Line 1 and had a length of 50 m. The final refraction survey was completed on Line 2 and had a length of 25 m. The station spacing was 1 m, 2 m and 1 m respectively. Each survey was completed using 24 one component geophones and hammer as a source. Data was recorded using SeisModule Controller Program and saved as .dat files. The data is recorded as follows:

|  |  |  |
| --- | --- | --- |
| 1.dat | Forward | Line 1 (25 m) |
| 2.dat | Forward | Line 1 (25 m) |
| 3.dat | Forward | Line 1 (25 m) |
| 4.dat | Reverse | Line 1 (25 m) |
| 5.dat | Forward | Line 1 (50 m) |
| 6.dat | Reverse | Line 1 (50 m) |
| 7.dat | Forward | Line 2 (25 m) |
| 8.dat | Reverse | Line 2 (25 m) |
| 9.dat | Reverse | Line 2 (25 m) |