

Table S1: Field measurements of lava flow thickness. Locations are reported for WGS 84 / UTM S zone 35M. Measurements are taken from local ground surface to top of flow.

| <i>Easting</i> | <i>Northing</i> | <i>Altitude (m asl)</i> | <i>Flow Thickness (m)</i> |
|----------------|-----------------|-------------------------|---------------------------|
| 750363         | 9824475         | 1928                    | 0.1                       |
| 750426         | 9824451         | 1925                    | 0.4                       |
| 750555         | 9824322         | 1923                    | 0.55                      |
| 750782         | 9824130         | 1926                    | 0.5                       |
| 749844         | 9822600         | 1781                    | 0.8                       |
| 749945         | 9822580         | 1783                    | 0.7                       |
| 750034         | 9822527         | 1782                    | 0.65                      |
| 749747         | 9821559         | 1751                    | 1.1                       |
| 749807         | 9821524         | 1756                    | 0.5                       |
| 749923         | 9821413         | 1751                    | 0.45                      |
| 749993         | 9821365         | 1751                    | 0.8                       |
| 750024         | 9821344         | 1750                    | 0.7                       |
| 750173         | 9821179         | 1754                    | 0.8                       |
| 749087         | 9818261         | 1579                    | 1                         |
| 749291         | 9818204         | 1575                    | 3                         |
| 749121         | 9818201         | 1559                    | 2.2                       |
| 752113         | 9827294         | 2129                    | 0.3                       |
| 751694         | 9827275         | 2162                    | 0.1                       |
| 752363         | 9826722         | 2060                    | 0.2                       |
| 751913         | 9826396         | 2134                    | 0.3                       |
| 753340         | 9826080         | 1984                    | 0.2                       |
| 752981         | 9825264         | 1967                    | 0.5                       |
| 754336         | 9824974         | 1940                    | 1                         |
| 753816         | 9824768         | 1934                    | 0.6                       |
| 753139         | 9822270         | 1985                    | 0.4                       |
| 753460         | 9822085         | 1863                    | 0.9                       |
| 753236         | 9821621         | 1835                    | 1.1                       |
| 753447         | 9821476         | 1831                    | 1.96                      |
| 752951         | 9820604         | 1728                    | 1.1                       |
| 753029         | 9820597         | 1729                    | 0.8                       |
| 751945         | 9820000         | 1694                    | 1.4                       |
| 752225         | 9819894         | 1703                    | 1.9                       |
| 751942         | 9819645         | 1695                    | 2                         |
| 751608         | 9825972         | 2060                    | 0.2                       |
| 751552         | 9826143         | 2061                    | 0.1                       |
| 751055         | 9826457         | 2136                    | 0.3                       |
| 750968         | 9826508         | 2132                    | 0.4                       |
| 751208         | 9825628         | 2079                    | 0.3                       |
| 751333         | 9825790         | 2073                    | 0.4                       |
| <b>Average</b> |                 |                         | <b>0.79</b>               |