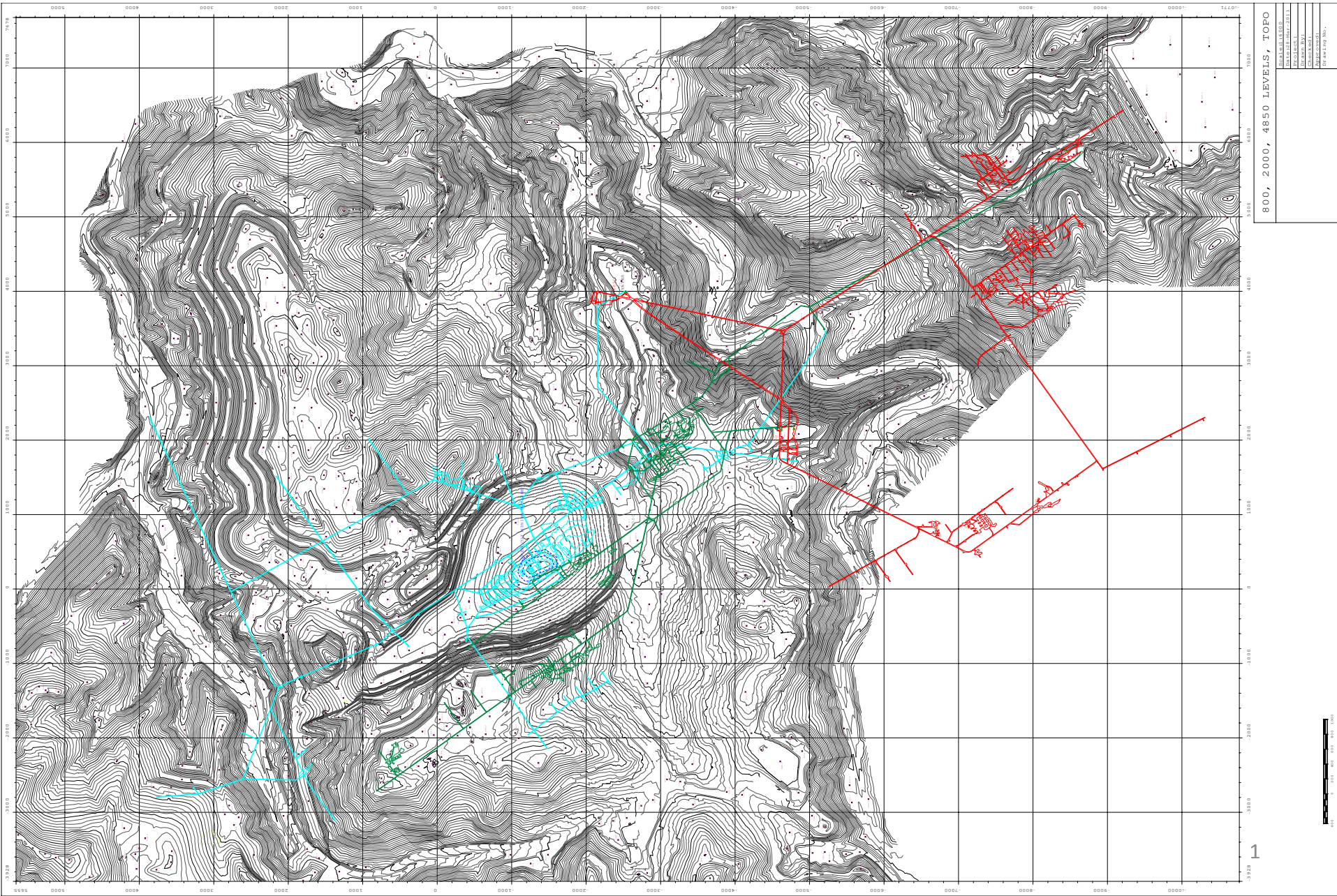
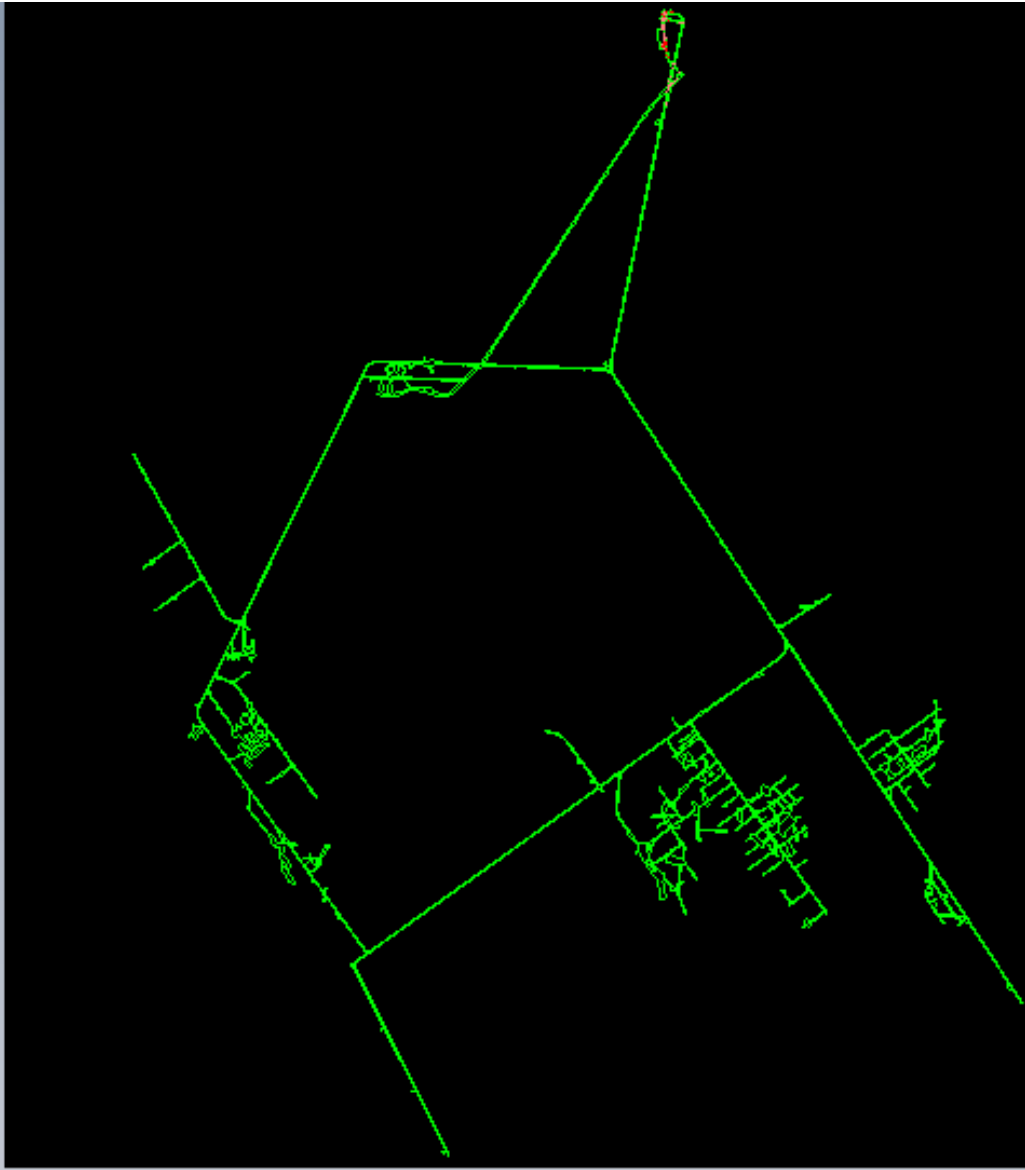


# Mountain profile of Homestake

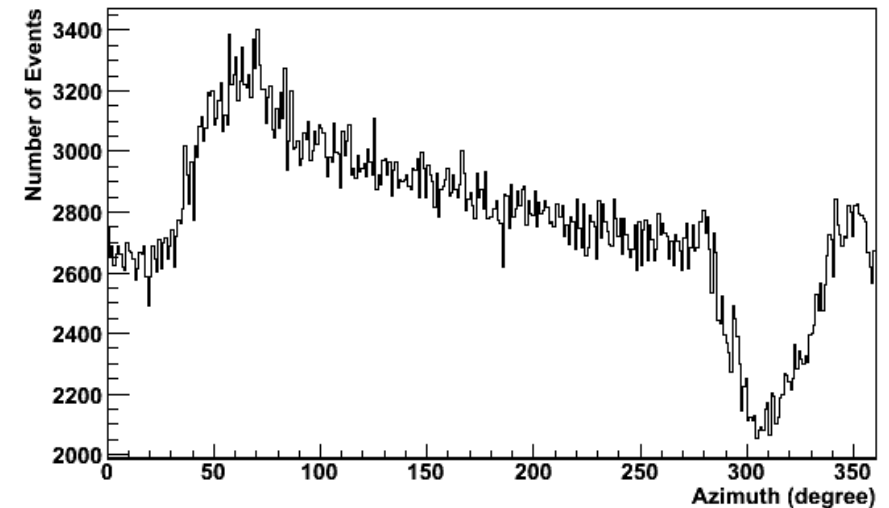
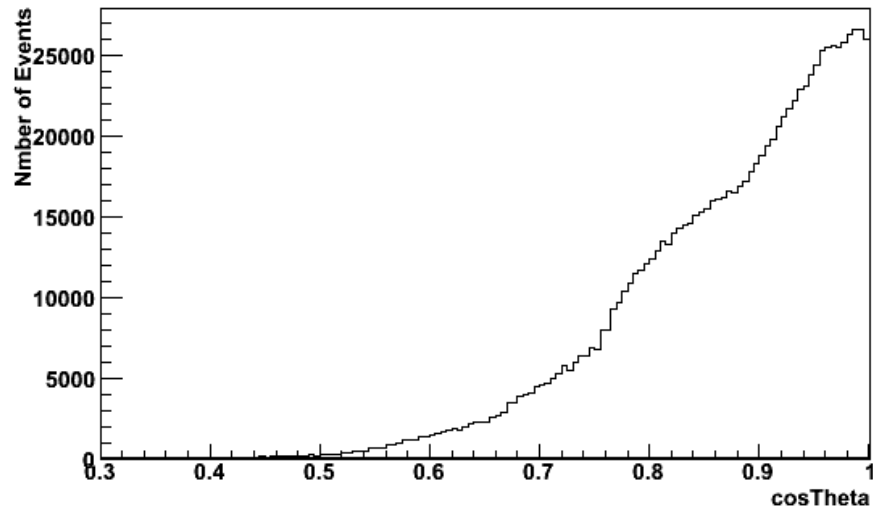
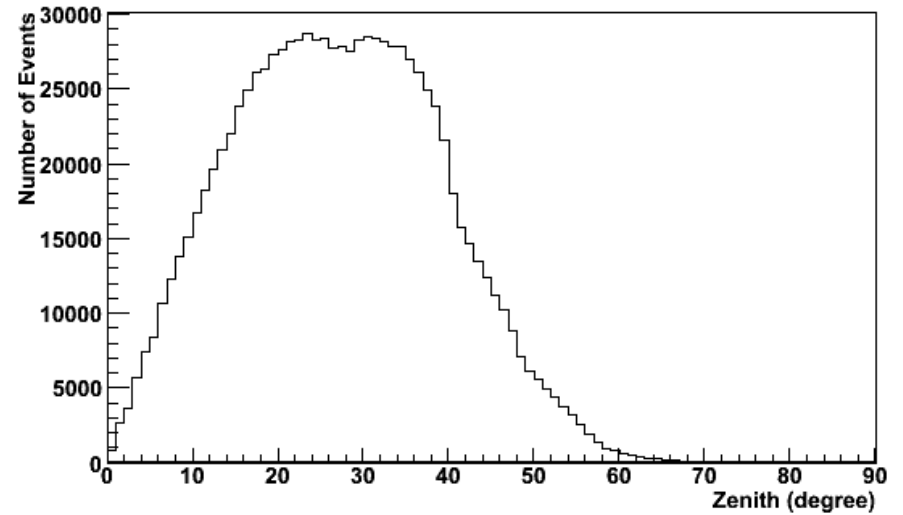
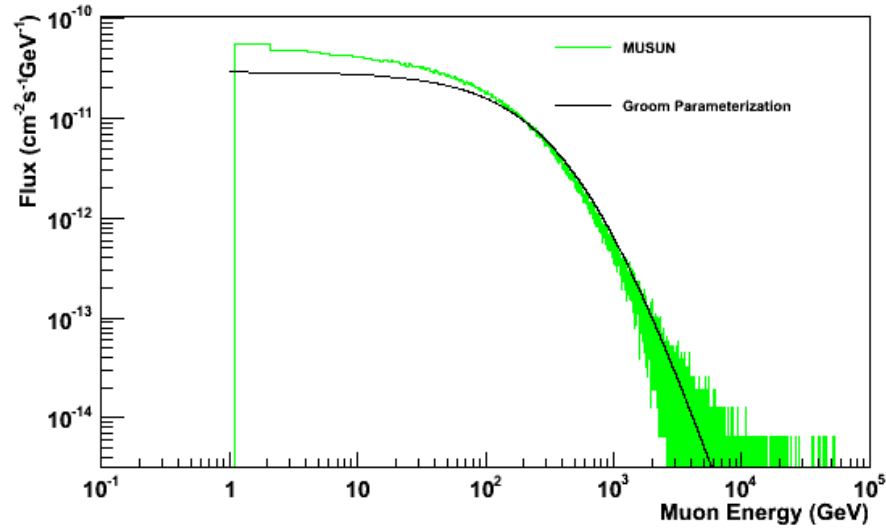


# 4850ft level of Homestake



| Rock Component<br>(Sample 278-2) | Composition<br>(% weight) |
|----------------------------------|---------------------------|
| $SiO_2$                          | 43.7                      |
| $TiO_2$                          | 1.22                      |
| $Al_2O_3$                        | 13.6                      |
| $FeO$                            | 12.7                      |
| $MnO$                            | 0.13                      |
| $MgO$                            | 7.0                       |
| $CaO$                            | 7.9                       |
| $Na_2O$                          | 2.87                      |
| $K_2O$                           | 0.21                      |
| $P_2O_5$                         | 0.07                      |
| $H_2O$                           | 10.7                      |
| $^{232}Th(\alpha, n)$ Yield      | 0.34/g/ppm/y              |
| $^{238}U(\alpha, n)$ Yield       | 0.86/g/ppm/y <sup>2</sup> |

# Muon flux at 4850-level of Homestake





# Simulation of mu-induced neutrons at 4850-level

- Rock sample at 4850-level.
- 20m\*20m\*20m cavern with 7m rock coverage.
- Input muon spectrum from MUSUN-DUSEL-4850 ( $6.46\text{e-}9\text{cm}^{-2}\text{s}^{-1}$ ).

