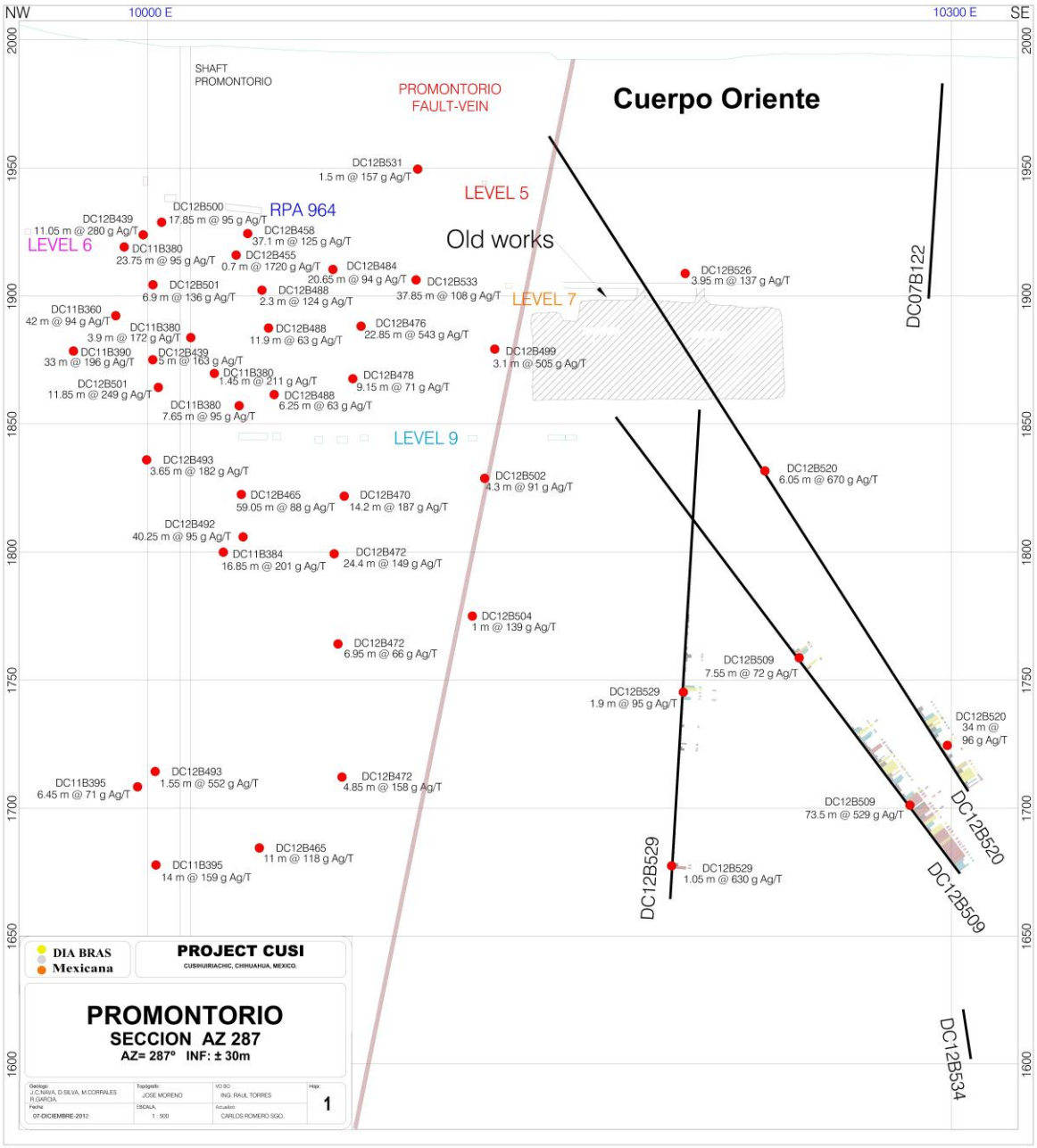Cross section holes 509 and 520