

## **Abstract**

Nickel is one of the white metal silver is widely used in various applications and industries, such as steel armor, protective copper, industrial batteries, electronics, gas, maker of powerful magnets, the manufacture of laboratory equipment (nichrome) wire electric lights, a catalyst fat, agricultural fertilizers and various other functions. Therefore, the need for exploration of nickel resources. To obtain information about the presence of nickel deposit, then the exploration activities that need to be done the modeling and calculation process source. The modeling is done using spatial data and seismic wave data to meihat underground layer structure by looking at the slope of the topography of the land and complete the seismic wave equations using finite difference method.

From the analysis of the test results show that the seismic wave equation can be solved by using the finite difference method and the result is below the surface of the ground which can then be used to mengekstimasi existence nickel deposit. The existence of nickel deposit is indicated by the slope of the land surface topography and its location between the range of -0.2 to 0.2 which is an amplitude range with weathering nickel deposit thicker than other amplitude range.

**Keywords:** seismic wave data, amplitude, seislabs, the finite difference.