

## **DESIGNING A MINE VENTILATION SYSTEM FOR CLASSIC ONE MINE**

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### **ABSTRACT**

Mining in Kenya is highly embraced with the highest population being small-scale mines. Gold and gemstone are the major minerals that constitute the largest percentage of the country's economy. However, it's one sector which poses great challenges to the wellbeing of workers and environs; poor ventilation is one problem. Poor ventilation has led to the increased endangerment of human health as a result of insufficient air quantity and quality. Most recorded death rates have been as a result of high amounts of dust and toxic gases in the mine workings. In order to reduce problems associated with poor ventilation in these mines; this project proposes to design a low-cost ventilation system for Classic One gemstone mine as shown in Figure 1. The ventilation system consists of main fans, booster fans, auxiliary fans, the main airway, branch airways and ventilation control devices. Data was collected through direct measurements, interviews, questionnaires, books and relevant journals. This data was carefully examined and thoroughly analyzed to derive the required parameters. From the analyzed data, a suitable mine ventilation system was designed for Classic One Mine.