ASSET MANAGEMENT FORUM (AMF)

St. Helena 10 Shaft: Risk of methane explosion

The shaft has the historical methane (flammable gas) explosion during the production stage.

The shaft was never used for production ever since Harmony Gold Mine acquired the assets of St. Helena Shafts from Gencor group.

The shaft was covered on surface with concrete slabs to prevent unauthorised entry.

The decision was taken to fill-up the shaft with rubble from the waste rock dump and during risk assessment, it was realised that the shaft upcast (air comes out of the shaft) with methane concentration of 0.4%.

During the filling up of the shaft regular methane tests were conducted by contractors and weekly by Occupational Hygiene personnel from Asset Management Forum (AMF) and no methane test were ever above 5%.

NB: Methane will explode when the following are present:

- Methane concentration of 5% – 15% present in the air.
- There must be an ignition eg. Spark, open flame

Methane concentration was below the explosive range during the filling up of the shaft

There are no sources of ignition in the material used to fill up the shaft to can cause an ignition which can result to an explosion.

Conclusion

1. There is no methane explosion foreseen at the shaft as a result of the above mentioned conditions.
2. Should there be a methane explosion, the impact of the explosion will be absorbed by the mass of the rubble (waste rock material).

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