



111 HARRINGTON STREET, CAPE TOWN, 8000
PO BOX 4637, CAPE TOWN, 8000
TEL: (021) 462 4502 FAX: (021) 462 4509

**REPORT OF SITE VISIT AT JAGERSFONTEIN, FREE STATE
TO ASSESS THE PROPOSED INFILLING OF THE MINE PIT
FROM JAGERSFONTEIN DEVELOPMENT INC.**

PROGRAMME OF THE DAY

08h45 Meeting with Free State Provincial Heritage Resources Agency
09h45 Depart for Jagersfontein
11h00 Meeting with Jagersfontein Development
12h45 Lunch
14h00 Site visit of the mine pit
15h30 Visit of the town to assess state of heritage buildings
16h30 Departure for the airport

PARTICIPANTS

SAHRA

Dr Mariagrazia Galimberti

Ms Kathryn Smuts

SAHRA PERMIT COMMITTEE MEMBERS

Dr Amanda Esterhuysen

Dr John Rogers

FREE STATE PROVINCIAL HERITAGE RESOURCES AGENCY

Ms Loudine Philip

Ms Ntando Mbatha

Ms Marianna Botes

JAGERSFONTEIN DEVELOPMENT

Mr Henk van Zuydman

Mr Marius de Villiers

Dr Graham Howell (SRK)

OUTCOME OF THE MEETING BETWEEN SAHRA AND FS PHRA

The meeting was called to explore how SAHRA and the FS PHRA could work together to reach a decision on this matter and to determine what the position of the FS PHRA is in this regard. The issue of the filling of the mine pit is directly related to the life of the town and its mining history. Jagersfontein as a mining town is strongly associated with the mine pit and the sense of place of its citizens is undoubtedly related to the presence of the mine. Since the mine closed down in 1971, no real economic development has occurred in the town.

It is important to define whether the significance of the mine pit is linked exclusively to its historical value or also to its geology.

There are concerns regarding the safety of the water which is pumped out of the mine shaft. The water that accumulates in the pit, filters through to the ventilation shaft, from which it is pumped. This is the source of water for Jagersfontein and Fauresmith. It is possible that by filling the mine pit the water will be affected.

Practically, it is difficult to stabilize the Jagersfontein mine pit since the dolerite at the top of the pit is grinding. Given this, the PHRA may agree to the infilling of the hole as a last resort, provided that certain conditions are met; amongst these:

- the footprint of the original pit should be maintained
- part of the profit should be invested into projects to uplift the cultural heritage of the town

The depth and the shape of the pit are, however, as significant as its footprint and it would be valuable to retain them.

Ms Smuts presented a few pictures taken the previous day in Kimberley (Figs. 1 and 2), where the De Beers pit had been filled from 1994 to 2010 with the reprocessed material of mine tails and slimes and it has now been turned into a wetland. If this option had to be used in Jagersfontein, it might attract some tourists for bird-watching.

Another option is to maintain the pit open as training ground for geology students. However, if the entire town had to be declared, the province would have no capacity for managing the site.



Figure 1. Details of the De Beers pit in Kimberley.



Figure 2. The De Beers pit in Kimberley which had been filled with the waste material from reprocessed mine dumps and turned into a wetland.

OUTCOME OF THE MEETING BETWEEN SAHRA, THE FS PHRA AND THE JAGERSFONTEIN DEVELOPMENT (JD)

The Jagersfontein tailing dumps are exempted from new application for mining rights because of the Ataquia vs De Beers Judgment of 2007, but an application for prospecting rights on the entire area has been submitted to the Department of Mineral Resources in Welkom.

The land where the mine pit is located is owned by the Jagersfontein Development, however Mine Square was donated by De Beers to the Town Council.

Analyses on the water have already been undertaken by De Beers and the results showed traces of arsenic in the water. JD found this quite inexplicable since the town has been using this as drinking water for a long time and no phase of the diamond mining process is expected to produce As. If the material from both mine tails and mine slimes are to be used to fill in the pit, it is possible that an alternative plan will be needed for the water.

If the pit is going to be filled in, conveyor belts will most likely be used to achieve this because the edges of the pit are unstable and the filling of the pit must be controlled. Two areas from where the filling might start were chosen, their position was determined by the presence of a fault running on both sides of the pit. The filling would occur in stages and would be controlled. Different type of materials (slime and tails) would be used into the pit at different controlled mixtures to make sure that a layer of permeability is created within the mine pit and to ensure that the settling happens properly.

If the pit cannot be filled, the alternative option is to have a rehabilitation plan for all existing mine dumps and then have a new management plan for where to locate the new mine waste deriving from the reprocessing of the current mine dumps. The other issue that should be addressed, if the mine pit cannot be filled, is the stability of the pit. The ultimately responsibility of this lies with JD. It has been suggested that seismometers could be located to monitor tremors caused by the falling of rocks into the pit, but this has not been undertaken yet.

The mine is committed to reinvest part of the capital into the town as long as they receive support and commitment from the local municipality.

SITE VISIT TO THE PIT (Figs. 3-4)

The viewing platform on the pit was closed down about a year ago because of safety issues. The engineering report identified that the platform was not safe enough for people to visit (Fig. 4). During the site visit we did, however, walk on the viewing platform and along the edge of the pit. Some sections along the perimeter of the pit are more fragile than others and cracks are clearly visible in a few spots (Figs. 5-7).



Figure 3. Description of the mine pit



Figure 4. View of the mine pit from the viewing platform



Figure 5. View of the mine pit and of the viewing platform.



Figure 6. Crack in the side of the mine pit



Figure 7. Crack along the perimeter of the mine pit

The hostel for the mine workers (Figs. 8-10) had burnt down accidentally in 2010 and thereafter, the damaged wing was demolished to make way for the mining operations and a new processing plant.

Mining activities, in the form of the reprocessing of the mine dumps, have already started and for time being a new mine dump has been created next to the old ones to the east of the reprocessing process. Within the next few months though the mine will need to formalize a plan as to where to dispose of the extra material.



Figure 8. Google image view of the compound from 2010 before the southern portion of the workers' hostel burnt down.



Figure 9. View of the workers' hostel to the north.



Figure 10. View of the workers' hostel to the northwest.

SITE VISIT TO THE TOWN

A fire in July 2010 damaged the old municipal town hall, a Herbert Baker building, which was built in 1892 (Fig. 11). No effort has been made to restore the facility (Fig. 12-13) yet. The municipal theatre, a second Baker building, located on the same square, is also in a state of disrepair, although still functional.



Figure 11. View of the town hall after burning down, view to north east.



Figure 12. View of the town hall from Google Earth after burning down (2010)



Figure 13. View of the town hall from Google Earth before burning down (2008)