

PART 6: CONSIDERATION OF ALTERNATIVES

In accordance with Regulation 50(d) of the MPRDR¹ (2002) under the MPRDA² (2002), the land use and development alternatives and their social and cultural aspects have been considered in this part of the EMP³ (incl. EIA⁴).

6.1 ALTERNATIVES

The mining of diamonds followed the discovery of a Kimberlite pipe on Bultfontein in 1869. This in return gave rise to Dutoitspan Mine in 1870, as well as the Wesselton Mine in 1891. Since De Beers Kimberley Mines is an existing operation, no major project alternatives and impacts on the environment were considered prior to mining.

De Beers Kimberley Mines did however, commence with several new projects during the Operational Phase of the mining operations at De Beers Kimberley Mines in the past, such as the construction of the CTP⁵ and tailings dams associated with the CTP, amongst other. Alternatives were also considered with regards to the current mining operations undertaken at De Beers Kimberley Mines.

6.1.1 CURRENT MINING ALTERNATIVES

Alternative mining methods that could be implemented at the De Beers Kimberley Mines include the following:

- Insitu rehabilitation of tailings resources
- Reclaiming and retreatment of the tailings resources.

In line with the requirements of the MPRDA (2002) the feasibility of the “No Project” option was also considered as part of the EMP (incl. EIA). Since De Beers Kimberley Mines is an existing operation, the ‘No Project’ option will result in the immediate Closure of De Beers Kimberley Mines, as discussed below.

6.1.1.3 Reclamation of old tailings resources

Since opencast and underground mining activities have ceased at De Beers Kimberley Mines, it was necessary to consider all the possible alternatives. Due to improved technology, it became feasible for De Beers Kimberley Mines to reclaim most of the tailings resources located within the De Beers Kimberley Mines mining area.

6.1.1.4 The ‘No Project’ option

6.1.1.4.1 Immediate Closure

Immediate Closure was considered as one of the mining alternatives since both opencast and underground mining activities have ceased at De Beers Kimberley

¹ MPRDR: Mineral and Petroleum Resource Development Regulations (R.527), dated 23 April 2004.

² MPRDA: Mineral and Petroleum Resources Development Act, Act No. 28 of 2002.

³ EMP: Environmental Management Programme.

⁴ EIA: Environmental Impact Assessment.

⁵ CTP: Combined Treatment Plant.

Mines. However, it has been found viable for De Beers Kimberley Mines to reclaim most of the tailings resources located within the mine boundary of De Beers Kimberley Mines due to improved technology.

The tailings recovery operations were estimated to continue until 2018, with the potential to extend mining to 2035. The Life of Mine is therefore extended by current mining and related activities, which also pose various advantages to the socio-economic structure of Kimberley.

In addition, the implementation of the management and mitigation measures pertaining to the tailings resource recovery operations currently undertaken will reduce the significance of De Beers Kimberley Mines on the environment. The implementation of the 'No Project' option is therefore not warranted.

The "No Project" option was rejected based mainly on the following reasons:

- It is anticipated that current and potential impacts can be managed to reduce the significance of the impacts to acceptable levels, and to ensure that long-term environmental impacts and liabilities will be minimised.
- The reclamation of the tailings resources is feasible.
- The potential economical and socio-economical impacts that would arise as a result of immediate Closure would be severe.

Also, immediate Closure would result in the development of a Closure EMP not being completed and therefore not being implemented, which would have significant long-term effects on the environment as well as on the socio-economy.

The potential impacts identified through the EMP process with regards to the reclaiming of identified tailings resources will be managed according to the commitments in the EMP, and thus the 'No Project' option was discarded. Some of the factors that were taken into account during the consideration of the feasibility of the 'No Project' option include, but are not limited to, the following:

- The wetlands such as the Dutoitspan have already been impacted upon due to previous mining and related activities undertaken at De Beers Kimberley Mines. In addition, Dutoitspan is regarded as a return water dam since it contains contaminated water. It is therefore not anticipated that the tailings resource recovery operations will further impact on the already impacted wetland. In addition, rehabilitation and Decommissioning Phase activities may impact positively on the pan.
- The recovering of the tailings resources will impact positively on numerous aspects such as soil, land capability and land use. After removal of the tailings resources identified to be reclaimed, the remaining footprint area will be rehabilitated, thus improving the land capability and possible land use of the area.
- The tailings resources within the mine boundary of De Beers Kimberley Mines do not provide a suitable habitat for either plant- and / or animal species. After the identified tailings resources have been removed and rehabilitated, it will be possible for vegetation to establish in these areas and therefore also providing the possibility

of suitable habitat for animal species (where applicable, depending on the agreed end land use objectives).

- The current groundwater impacts will need to be addressed so as to limit the long-term environmental liabilities associated therewith, which would not be implemented if the mine underwent immediate Closure.
- The implementation of the 'No Project' option will eliminate the employment opportunities for the existing labour force of employees at De Beers Kimberley Mines since they would no longer be needed. This will in return result in the loss of job opportunities for at least 200 employees and various contractors also involved with operations at De Beers Kimberley Mines, as well as eliminating the potential economical benefits that would have been experienced by the surrounding community through interaction with small business enterprises, etc.
- Other current impacts can be managed and improved through various rehabilitation activities, amongst others, and as such, the immediate Closure of De Beers Kimberley Mines is not an environmentally viable option.