JAGERSFONTEIN
DEVELOPMENTS

14 July 2022

The South African Heritage Resources Agency

111 Harrington Street

Cape Town

8001

Free State Heritage Resources Authority

Department of Sport, Art, Culture and Recreation

Private Bag X20606

Bloemfontein

9300

Attention: Phillip Hine / Ragna Redelstorff

SAHRA Case Number 14974 & 13978

MOTIVATION FOR APPLICATION BY JAGERSFONTEIN DEVELOPMENTS (PTY) LTD FOR A PERMIT IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT, NO 25 OF 1999 ("NHRA") FOR THE PROPOSED BACKFILLING OF THE OLD JAGERSFONTEIN OPEN PIT LOCATED ON PORTION 15 OF THE FARM JAGERSFONTEIN 14 IS, SITUATED IN THE MAGISTERIAL DISTRICT OF XHARIEP, FREE STATE PROVINCE

1 INTRODUCTION

1.1 Jagersfontein Developments (Pty) Ltd ("**JD**") proposes to backfill the old Jagersfontein open pit ("**Pit**") with fine tailings suspended in water ("**Paste**") and coarse tailings from its tailings processing operations ("**Tailings Operations**").

1.2 As the Pit has a surface area of 19.65 hectares (196,500m^2) and the backfilling will change its character, the proposed project constitutes a development / activity as contemplated under section 38(1)(c)(i) of the NHRA, namely –

"*any development or other activity which will change the character of a site exceeding 5000m^2 in extent*".

1.3 This document constitutes JD's motivation for undertaking the proposed development / activity and is submitted in support of its application for a permit in terms of section 38(1)(c)(i) of the NHRA ("**Section 38 Application**").

1.4 A permit was granted by SAHRA in 2013, authorising JD to backfill the Pit ("**2013 Initial Section 35 Permit**"), following an application under section 35 of the NHRA ("**Section 35 NHRA Application**"). Following an appeal by a third party to the Appeal Tribunal, established under the NHRA, the Initial Permit was set aside and redirected to the SAHRA for the reason that public participation was required. JD withdrew the Section 35 NHRA Application; and submitted an application under section 38 of the NHRA ("**Section 38 Application**"). It has obtained further specialists reports and conducted the required public participation (discussed below).

2 PHOTOGRAPHS OF PIT

Figure 1: Aerial map of the pit and surrounds

Figure 2: 2022 serial map of the Pit and surrounds

Figure 3: Clear indication of the pit mining itself, caving in

Figure 4: Condition of the outlook position.

Figure 5: Old undermined installations.

Figure 6: Block of material about to fall into the Pit.

Figure 7: Numerous cracks at distance of 5m 10m from the edge of open Pit.

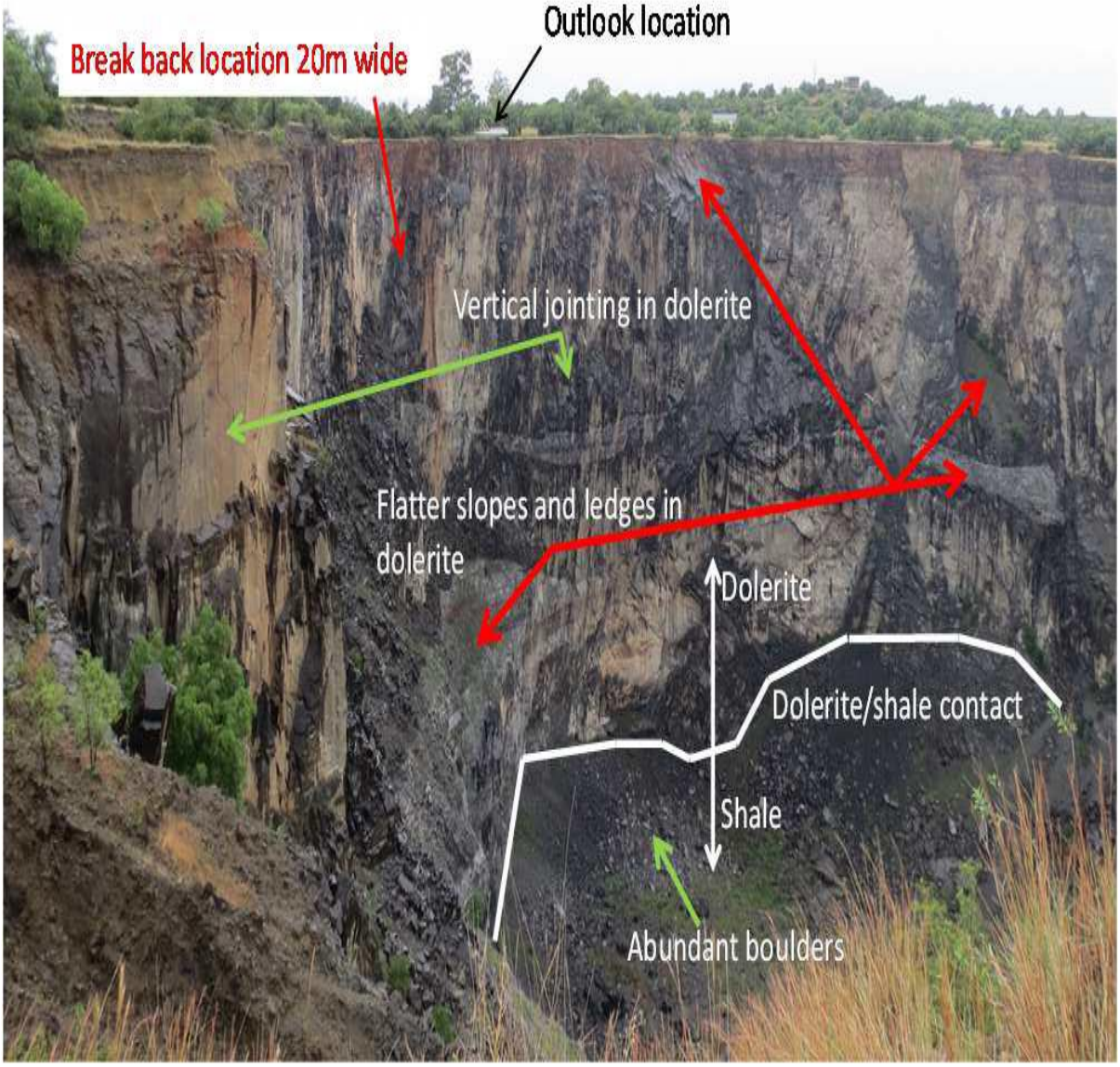


Figure 8: Variability in open Pit side slopes to the north

Figure 9: Very consistent high wall rock conditions close to the outlook location

May 2017 Underground Pit Condition Inspection Report – Drone Photos


29°45'45" S 25°25'6" E4159.6 FT


29°45'45" S 25°25'6" E4120.3 FT


29°46'46" S 26°26'4" E 4214.8 FT

Clear indication of Pit caving in

3 BACKGROUND

3.1 Historical Background

3.1.1 JD is the registered landowner of Portions 15 and 16 of the Farm Jagersfontein 14 IS ("**Farm Jagersfontein**") and leases a section of the Remainder of the Farm Jagersfontein, which properties are situated in the Jagersfontein Town ("**Jagersfontein**"), Free State Province.

3.1.2 Its Tailings Operations involve the processing of several tailings dumps ("**Tailings Dumps**") at its plant, situated 400m south-west of the Pit ("**Plant**"). The Tailings Dumps were previously owned by De Beers Consolidated Mining Ltd ("**DBCM**") and created from previous mining operations on the Farm Jagersfontein.

3.1.3 The Pit is located on Portion 15 of the Farm Jagersfontein ("**Portion 15**"). It has a surface area of 19.65 hectares ("**ha**") and depth of 275 metres below ground level ("**mbgl**"), if measured from the Pit's surface to the exposed bottom layer ("**EBL**"). There are voids underneath the EBL, which have thickness of approximately 100m. Considering the Pit's shaft and other voids below the visible EBL, its depth is approximately 800m.

3.1.4 Various parties created the Pit over a period of 40 years from 1870, through opencast mining of Portion 15. Jagersfontein Mining and Exploration Company was the last entity to mine the Pit utilising opencast mining, which ceased in 1913. Between 1913 and 1970 underground mining took place intermittently on Portion 15 and the adjacent properties.

3.1.5 DBCM took control of the Jagersfontein Mine in 1940 and purchased Portion 15 in 1949. It did not mine the Pit at any stage through opencast methods and undertook underground mining until the Jagersfontein Mine was decommissioned in 1971.

3.1.6 JD obtained ownership of Portion 15 and the Tailings Dumps in 2008 from DBCM and proceeded with the Tailings Operations from 2010.

3.2 Existing Operations, Infrastructure and Services

3.2.1 Save for the viewing deck, which has been closed to the public due to safety risks, no other infrastructure or services are located at the Pit.

3.2.2 Groundwater is abstracted from a shaft located approximately 130m south of the Pit and used at the Plant under a Water Use License (**"WUL"**) issued in 2018.

3.2.3 The operational area of the Tailings Operation extends over Portions 15 and 16 and the Remainder of the Farm Jagersfontein, which properties have a combined surface area of 5 945 hectares (the "**Operational Site**"). This area includes the Jagersfontein, Charlesville and Itumeleng Towns.

3.2.4 The Jagersfontein Town residential area is located approximately 140m north-east of the Pit, with all infrastructure associated with a town. There are approximately 20 residential houses to the east outside of the main Jagersfontein Town that are located between 150 and 350m from the Pit. The Historical Town Square (which has to a large degree been destroyed by looting) is situated approximately 200 to the east. The Blue Diamond Lodge, e office of the Itumeleng Trust, After Day Care Centre, and Thusa Sechaba Creché are located within 100m north-east of the Pit. The access road to the Operational Site, a guesthouse and 2 residential houses and a creche are all located within 100m from the Pit.

3.3 Proposed Project

3.3.1 The Pit is currently in a serious state of degradation and very unstable, due to back-breaking of the sides / walls, which has and can result in associated vibrations in the area. The risks posed by the Pit, which are further detailed below, were previously assessed by Mr HAC Meintjies and Dr G Howell of SRK Consulting (South Africa) (Pty) Ltd ("**SRK**") in the report entitled "*Review of Jagersfontein Pit Stability and Backfilling Options*" (Report Number 445072/1, April 2012) ("**2012 Initial Geotechnical Report**").

3.3.2 Since the recommendations in the 2012 Initial Geotechnical Report, to ensure the safety of the people residing in Jagersfontein and adjacent buildings, JD has sought to rehabilitate and restore the Pit's stability by backfilling it with Paste and coarse tailings from the Plant that remain after processing of the Tailings Dumps (the "**Proposed Project**").

3.3.3 The 2012 Initial Geotechnical Report was updated in November 2021 by Dr. Howell and forms the basis of the method of backfilling. The report is titled ***Jagersfontein Pt Backfill Design Assessment Revision 1*** ("**2021 Geotechnical Report II**")***.***

3.3.4 A geological study of the Pit was furthermore conducted in November 2021 for purposes of the Groundwater Impact Assessment ("**GIA**") by Professor Dr W.P Colliston, titled *Desk Study of the Geological Aspects of the Jagersfontein Open Pit Joints and the Linkage of the Shallow Aquifer (Valley Aquifer) to the Open Pit* 2021 ("**2021 Geological Report II**").

3.3.5 As set out in the 2021 Geotechnical Report II, the proposed method of infilling will involve discharging coarse tailings from the southern rim into the Pit, for a period of approximately 4 months, to create a buffer on the base and southern wall. Paste will be deposited thereafter with the coarse tailings until end of the life of the Tailings Operations in 2028. Due to the low permeability of the Paste in relation to the coarse tailings, the coarse tailings will "contain" the

Paste and prevent seepage of the Paste through it. This will cause the Pit to be filled to a level of approximately 30mbngl). Due to the time passed since the 201 Geotechnical Report II was compiled, it is likely that the level will be between 40 - 60mbngl. The 2021 Geotechnical Report II includes the following aspects –

3.3.5.1 the Pit will not be completely backfilled, but partially filled to contain all the remaining surface tailings available from the time backfilling commences. It is expected that the Pit will be backfilled to a depth of approximately 60mbgl depending on the Proposed Project's commencement date and the volume of tailings to be backfilled;

3.3.5.2 partial filling of the Pit is a practical option insofar as no residual risks will remain;

3.3.5.3 given the above, it will no longer be a feasible to establish a park / wetland on the backfilled Pit's footprint (which was previously investigated by JD); and

3.3.5.4 stormwater from the catchment areas (in the north and west) will not be allowed to drain into the Pit and will be diverted around it into the Dam 10 catchment, using trenches or channels. Berms will also be made around the Pit to prevent stormwater from entering it.

3.3.6 No additional buildings will be constructed for purposes of the Proposed Project, as the Tailings Operation's existing facilities around the Pit will be used.

3.3.7 The only major infrastructure to be constructed is a conveyor system and an 8 inch (200mm) pipeline for the transportation of the coarse tailings and Paste to and into the Pit. The pipeline's distance from the Plant to the Pit will be approximately 800-900m.

4 DOCUMENTS PROVIDED

4.1 The documents below have been uploaded to SAHRIS as additional documents to this Section 38 Application:

1.1	2013 Initial Section 35 Permit
1.2	Polke Birholtz, PGS Heritage, Heritage Impact Assessment Report, February 2021 ("**2021 HIA**")
1.3 & 1.4	Correspondence between JD and the South African Heritage Resources Agency ("**SAHRA**"), dated 20 July 2021 and 10 January 2022;[1]

[1] SAHRAs letter was dated 2021 but was only received in 2022.

1.5	2022 Heritage Management Plan, compiled by Turn180 ("**2022 HMP**")
1.6	Photos of upgraded Jagersfontein Museum;
1.7	Heritage Study of Jagersfontein compiled by Loudine Phillips
2	2012 Letter from Dr Craig Smith, Executive Manager of the Geological Society of South Africa ("**GSSA**") supporting the Pit's backfilling ("**GSSA Letter of Support**");
3.1	Water Use Licence Application submitted to the Department of Water and Sanitation ("**DWS**") for a section 21(g) WUL for the Proposed Project ("**Pit WULA**"), including the
3.2	2021 Geotechnical Report II, with various attachments included as part of the WUL, including:
3.2.1	2012 Initial Geotechnical Report (Appendix A);
3.2.2	C&A Mining Exploration Consultants, Underground Shaft Report, dated May 2017 (to verify condition of Pit's seals and access points (Appendix D) ("**May 2017 Underground Pit Condition Inspection Report**");
3.2.3	Surface Water Resources Assessment, compiled by OJ Gericke and dated June 2013, ("**2013 Surface Water Assessment**") (Appendix E)
3.2.4	Groundwater Impact Assessment, prepared by GHT Consulting and dated October 2021 (Appendix I)
3.3	Desk Study of the Geological Aspects of the Jagersfontein Open Pit Joints and Linkeage of the Shallow Aquifer to the Open Pit compiled by Prof Dr W Colliston and dated September 2021 ("**2021 Geological Report II**")

4.	2022 final Socio-Economic Impact Assessment Report, compiled by Tandi Kolbe of Surveya Global and dated February 2022 ("**SEIA**)
5.	2021 Environmental Management Programme for the Tailings Operations, compiled by Turn180
6.1	Kopanong Local Municipality ("**KLM**") Local Economic Development Strategy ("**LEDS**") for 2013 to 2018
6.2	KLM Annual Report for the financial year ending 30 June 2017 - 2018 ("**KLM Annual Report 2017/208**")
6.3	KLM Annual Report for the financial year 2018 / 2019 ("**KLM Annual Report 2017**")
6.4	KLM 4th Generation of Integrated Development Plan Review 2020 - 2021 ("**KLM IDP**")
7.1 & 7.2	Objection to the public participation process for the Section 38 Application ("**PPP**") submitted by Esias Jeremia Gerber ("**Gerber Objection**") and JD's response to the Gerber Objection
8.	Email from Free State, Department Small Business Development, Tourism and Economic Affairs to Turn180 Environmental Consultants, dated 5 June 2018, indicating that they support the backfilling of the Pit.

4.2 Drone footage of the Pit will also be delivered to SAHRIS. Due to its size, it cannot be electronically uploaded onto SAHRIS.

5 MOTIVATION FOR THIS APPLICATION

5.1 JD submits the following grounds below as motivation for the Section 38 Application.

5.1.1 Extreme risks to persons and homes created by Pit's instability

5.1.1.1 Important observations in the 2012 Initial Geotechnical Report include the items below.

5.1.1.1.1 Some of the Jagersfontein residents live 80m to 100m from the Pit's current rim location.[2]

5.1.1.1.2 Since mining of the Pit ceased in the 1970s, there has been ongoing reports from the Jagersfontein Community of break back of the Pit's steep slopes. (There have also been recent reports from the employees at the Tailings Operation regarding breakback, which is heard during and after rain events).

5.1.1.1.3 At SRK's site visit to the Pit in 2012, abundant boulders were noted on the Pit's floor, which have fallen from the upper slopes, indicating the presence of an active geological process. [3] (These boulders can still be observed).

5.1.1.1.4 On the north-eastern side, the joints move in and out of the Pit face up to 70 degrees. Generally, the dolerite is quite massive, with joint sets in the southern side spacing between 10 and 30m. On the north-eastern side, the joint spacing may be about 10m or less. On the Pit's western side there are several joint sites allowing topping failures to take place.

5.1.1.1.5 There are numerous places at the Pit where the joints are open, clearly due to movement which will influence the development of break back. On the northern side, open joints were observed, indicating further development of break back on this area.

5.1.1.1.6 Closer inspection of this area shows that the weathered materials are deeply incised by erosion gullies, which have left promontories (or islands and peninsulas) of potentially unstable materials.

5.1.1.1.7 Since the material is weathered and will be unstable in time, the contingent effect will be removal of support from the surrounding dolerite sill material and preferential failure in the area.

5.1.1.1.8 On the north-eastern wall, a localised adversely dipping joint set and the surface weathered zone indicates that sliding failure of the rock mass in this area is possible.[4]

5.1.1.1.9 Numerous examples of old hoisting equipment and concrete installations are visible on the Pit's eastern side. All have been undermined to greater or lesser degree, thus indicating the active nature of the break back process.

5.1.1.1.10 During a Site visit, there were two occasions when noise was heard from the Pit's side slopes when large rock boulders broke loose and fell to the bottom of the Pit. This is ongoing evidence related to active geological processes attempting to flatten the Pit's side slopes in the longer term, by the slope's break back phenomenon.

[2] Geotechnical Report page 9.

[3] Geotechnical Report page 15.

[4] Geotechnical Report page 16.

5.1.1.1.11 An outlook was present on the Pit's northern side. The rock beneath the Pit has completely collapsed.[5]

5.1.1.2 The photographs on pages 17-20 of the 2012 Initial Geotechnical Report and clearly depict the Pit's instability. Drone photos also clearly reflect the collapse / caving in of the Pits walls are also included in the May 2017 Underground Pit Condition Inspection Report (pages 11 – 15).

5.1.1.3 Due to the above, significant risks to persons and property from the Pit's present instability were highlighted in the 2012 Initial Geotechnical Report. These include the items below.

5.1.1.3.1 The Pit, with time, breaks back and the increased rim will affect property and structures close to the Pit. This means, with time, some of the property within the break back zone of the Pit will or could fall into the Pit. At present, this zone is 100m wide. The associated risks to human life and safety are patent.

5.1.1.3.2 JD has fenced Portion 15, and, for obvious safety reasons, access is denied to the public. The break back zone however extends beyond Portion 15. If the Pit is not backfilled, neighbouring owners would face risks from the break back. The fence may need to be extended onto neighbouring properties, effectively sterilizing these properties for use.

5.1.1.3.3 Every time there is a significant break back event, there will be vibration shock waves associated with the event (as have already been communicated by community members to JD). These shock waves could behave similarly to very small earthquake tremors and cause damage to houses and structures close to the Pit. Rehousing residents in the zone of influence would seem to be the only mitigation if the Pit is not backfilled.

5.1.1.4 The 2021 HIA included a study of available early editions of topographic maps and old aerial photographs, which *inter alia* provided information on the study area's historic layering. The specialist noted that comparisons between the Pit's outlines (depicted on the topographic sheets' two early editions) with its current outline (depicted on a recent Google Earth satellite image), indicate that the Pit's current outline is quite a bit wider than initially. He concluded that it seems likely this disparity is attributable to break back along the Pit walls.

5.1.1.5 The Pit's backfilling will enhance its stability significantly; the factor of safety is assessed to increase from 1.213 to more than 7,889.

5.1.1.6 A recent offer from JD to donate the Pit to SAHRA was not accepted, as it was stated by SAHRA to be too much of a liability for it to accept. This liability was noted by SAHRA, in looking at the specific facts of the case, to be due to *inter alia* the*:* (i) considerable financial and resource burden it would incur should it accept the donation of the Pit; (ii) risks due to potential damages to the neighbouring communities should the Pit's break-backing result in property damage or physical injury; (iii) financial burden for SAHRA should it have to re-house residents in the zone of influence; and (iv) risks to SAHRA of specific litigation costs

[5] Geotechnical Report pages 16 - 17.

should the community, as they have already threatened and actioned, continue to oppose the Pit's backfilling.

5.1.1.7 From SAHRA's correspondence, it is clear SAHRA is also of the view that the potential risks emanating from the Pit are significant for a landowner; and has implied it should therefore be backfilled.

5.1.1.8 Due to the risks associated with the Pit, it was concluded in 2012 already that backfilling should commence as soon as possible.

5.1.1.9 The Pit's backfilling is still recommended by all specialists working on the Proposed Project, apart from the heritage specialist. As noted by Prof. Colliston in the 2021 Geological Report II "*the risk of failure of Pit walls is a function of the height of backfilling in the Pit – the lower the level of filling, the higher the percentage risk; e.g. backfilling to 1350 mamsl or 60m from ground level could potentially provide a 95% safety value while no backfilling would ensure a 100% failure rate over time - geologically speaking".*

5.1.1.10 The heritage specialist recommended the Pit's partial backfilling to a level of approximately 180mbngl and maintaining a water "head" on top of the backfill material, to create an illusion of the groundwater rest water level in the Pit being at this level. This proposal would not be supported by JD's environmental specialists or approved by the DWS. The Pit is located within a water scarce area; maintaining a water "head" would lead to evaporation and be a waste of water, not justifiable for only a visual effect.

5.1.1.11 The 2021 Geotechnical Report II sets out in detail what is proposed should backfilling of the Pit occur with tailings and the Paste from the Tailings Operations. Enhancing the Pit's stability was one of the main factors considered in the proposed method for backfilling the Pit. Comprehensive details and diagrams are included as to the proposed backfilling.

5.1.1.12 The Farm Jagersfontein is further scarred from mining operations that have been conducted for over 100 years and is in a state of environmental degradation. Proper rehabilitation of the property could only occur through backfilling of the Pit. Processing of the Tailings Dumps and backfilling them into the Pit is an environmentally sound project, which will lead to rehabilitation of the land. Such rehabilitation is in accordance with the principles enumerated in the National Environmental Management Act, No 107 of 1998 ("**NEMA**"), which SAHRA is obliged to consider when taking its decision to grant a permit in terms of this Section 38 Application.

5.1.2 <u>Third Party expert support for backfilling the Pit</u>

5.1.2.1 After the completion of the 2012 Initial Geotechnical Report, Howell's views of the risks created by the Pit and that the only option to backfill it was supported by the Geological Society of South Africa.

5.1.2.2 GSSA is similarly of the view that the Pit is in a serious state of degradation and will continue to collapse in the future. As per the GSSA Letter, this was verified by a member of the GSSA during a site visit in November 2012.

5.1.3 Other methods to stabilize Pit unfeasible

5.1.3.1 JD previously instructed Howell to investigate whether there are any civil engineering mechanisms that could be used to stabilise the Pit. His conclusion was that it is not feasible to carry out any stabilisation work due to the geological circumstances present at the Pit. If it were possible, it would be a world first and the biggest endeavour of its kind in the world, ever. This is due to the reasons set out below.

5.1.3.1.1 The difficulty with installing such stabilisation measures is that the area of potentially unstable ground in the Pit's north-eastern side (adjacent to Jagersfontein) is 90m wide. The break back area is associated with a wedge of material, which extends to a depth of more than 200m. To stabilise this area would conceptually require rock anchors with a length of approximately 150m long, spaced 10m by 10m for a distance along the Pit's rim of some 320m. That is a total of 320 anchors or 1280 anchors at a spacing of 5m by 5m.

5.1.3.1.2 The length and number of anchors is not a problem but the physical size of the anchors that would be needed to restrain the weight of the unstable materials in the side walls. The physical and practical aspects of installing such anchors from within the Pit, with a sheer face of nearly 300m, make it impossible.

5.1.3.1.3 Undertaking such a project is 100 times beyond present engineering capabilities (or 2 orders of magnitude). For example, the current highest building in Johannesburg is approximately 200m high. To build something that is 2 orders of magnitude higher would be 20,000m high (20km). This is impossible under the current engineering regime.

5.1.3.1.4 Engineering structures are also not 'eternal' and have a design life of 50 to 100 years (depending on how much time and money is put into them). Anything that is done at the Jagersfontein Pit (if it could be) would be subject to a lifespan; and reconstruction of some sort of engineering structures would be required within approximately 50 years.

5.1.3.1.5 If it were possible to install anchors at the Jagersfontein Pit, to avoid affecting the Pit's rim, an aerial support system would need to be constructed over the top of the Pit, to allow access from the surface downwards in a safe manner. An extensive crane and related infrastructure would be required for this aerial support system, to provide safe access. Even this would not be sufficient; shotcrete would be needed to bind the Pit's rim surface to ensure no loose rocks fall on people when they work below this level, using the aerial support system. This shotcrete layer would also affect the rim's appearance.

5.1.3.1.6 If it was possible to implement such anchors, an estimated budget would be about half a billion rand.

5.1.3.1.7 Possible man-made intervention to stabilise the Jagersfontein Pit would need to be the subject of an in-depth engineering design study to try and optimise the concept. But as a concept it is far outside the realms of possibility.

5.1.3.1.8 If the Pit is not backfilled, regular monitoring will also be necessary to ensure that risk reduction measures (fencing and exclusion zone) are maintained in perpetuity (which would be estimated to cost R150 000/ annum).

5.1.3.1.9 Clearly, other methods to stabilise the Pit are not feasible.

5.1.4 Land use considerations

5.1.4.1 Portion 15 is presently sterilised for any land uses due to the significant risks associated with it.

5.1.4.2 Importantly, if JD is not permitted to backfill the Pit, it would not have any other economically feasible alternative to dispose of the tailings and Paste remaining after the Tailings Dumps are processed. The result would be that the Farm Jagersfontein would remain environmentally scarred from the previous mining operations; and the Pit would still pose a significant safety risk. Even if it was financially feasible to construct a new tailings dam, it would need to be large and would merely create an extensive new development footprint on the Farm Jagersfontein, with impacts to the low aquifer.

5.1.5 Socio-economic considerations

5.1.5.1 Baseline information (through key informant interviews and a survey of 69 households) on the socio-economic conditions of the local communities and the positive and negative socio-economic impacts of backfilling the Pit have been included in the SEIA.

5.1.5.2 The socio-economic impacts of backfilling the Pit have been fully set out in the SEIA Study and are grouped according to economic, social, safety and health and cultural and heritage, with each impact grouping being assessed against the socio-economic baseline data and proposed project description. Table 0-1 of the SEIA includes a summary of the impact rating.

5.1.5.3 It was concluded that overall, none of the potential socio-economic impacts identified during the SEIA warrant the Proposed Project not proceeding.

5.1.5.4 The tailings storage facility at the Tailings Operations for disposal of residue from the Plant has one-year remaining life. If the Pit is not backfilled, JD will have no facility to dispose of its residue and the Operations will need to be permanently closed. The Jagersfontein Community would then not receive socio-economic benefits from the Tailings Operations, which is the only large industry in Jagersfontein and one of the few within KLM.

5.1.5.5 This would result in the loss of 180 employment positions, with 63% of the entire labour force being local residents residing in Jagersfontein. JD's total local procurement since 2012 is valued at approximately R30 million (with local procurement services including catering, transportation and tyre repair). JD implemented an Artisan Internship Programme, to train employees so that it could employ locally. Since 2012 JD spent R3,562,948 on training local community members. In addition, JD established an Artisan Training Centre in 2016 that ran for 2 years. At total of 80 students (at an annual costs of R2,6 millions) underwent training.

5.1.5.6 JDs various ongoing community projects would also need to be discontinued. Examples of such projects include installing a JoJo network around the Jagersfontein, Charlesville and Itumeleng areas, as these areas do not have drinking and washing water for most of each week (which is due to Bloemwater implementing restrictions due to KLM owing substantial amounts to it); cleaning of Jagersfontein, Charlesville and Itumeleng areas 2-3 times per year; restoring degraded roads; and restoring the Itumeleng Community Hall. JD has previously installed a water pipeline to the value of R1,1 million from the Wolwas Dam as

a contingency water resource for the communities; repaired the Jagersfontein Clinic's electrical problems; assisted KLM in extinguishing fires, repairing sewage pipes, maintaining the public sewage works, and providing diesel to KLM to fuel water tricks supplying water to the communities and providing the district hospital with water.

5.1.5.7 Furthermore, several of the Itumuleng Community Trust ("**ICT**") projects would need to be discontinued. The Sale of Assets Agreement concluded between JD and De Beers makes provision for a contribution by JD of R60 million for the benefit of the ICT. The ICT was established in 2012 and is a 10% equity owner in JD, with the communities being identified as the beneficiaries of the Trust. To date, JD has spent R17,556,718 on community development projects since 2012.[6]

5.1.5.8 The SEIA recommends various mitigation and management measures and compilation of the following management plans:

5.1.5.8.1 HMP to create and enhance the tourism potential of Jagersfontein and the Pit to include the measures discussed below;

5.1.5.8.2 Integrated Waste and Water Management Plan ("**IWWMP**");

5.1.5.8.3 Air Quality Management Plan ("**AQMP**");

5.1.5.8.4 Stakeholder Engagement Plan and Grievance Procedure: to facilitate communication between neighbouring communities and JD

5.1.5.8.5 Human Resources Policies and Procedures;

5.1.5.8.6 Community Development Plan that includes sustainable ways to ensure the safety of community members and livestock post-closure and various further community upliftment projects, to be implemented in conjunction with KLM; and

5.1.5.8.7 Closure Plan.

5.1.5.9 As discussed below, the 2022 HMP has been prepared and is uploaded with this application. An AQMP forms part of the mitigation measures included in JD's Environmental Management Plan. JD has an IWWMP (2019) for the Tailings Operations, approved by the DWS. It has submitted an updated IWWMP for the Tailings Operations and a proposed IWWMP for backfilling the Pit to the DWS as part of further WULAs. JD will submit the required closure plans for its Operations that is legally required by the relevant environmental legislation and its WULs. It will furthermore, as far as it reasonably and financially feasible, implement the remaining mitigation measures in the SEIA to enhance the positive socio-economic impacts from backfilling the Pit and decrease the negative impacts.

[6] Public benefit activities supported by the Trust between June 2014 – December 2021 primarily focused on improving education and health in the local communities and included: scholarships for tertiary education and accommodation, donations of textbooks, educational toys and playground equipment, scholarships for courses in tracking, hospitality, au pair, security and driving licences, school uniform donations, sports kids and refreshments for sports days; transport assistance for scholars and elderly, vision tests for elderly and feeding schemes and annual food hampers distributed to indigent beneficiaries. The ICT also established in 2019 two community projects, the After Day Care Centre for Grade 1 and 2s and the Ask Archie Computer Centre, which assists Grade 8 – 12 leaners wit e-learning schools for mathematics and science. The children are provided with food at the centre.

5.1.6 Heritage value and tourism potential of the Pit

5.1.6.1 JD acknowledges that the Pit has heritage value, being the world's biggest and oldest vertical handmade diamond mine of its kind and is of historical and cultural importance. The Pit's history and heritage value of the Pit is set out in detail in the 2021 HIA.

5.1.6.2 This is however one of a myriad of factors that should be assessed when considering the future of the Pit and whether backfilling it will be a sustainable development, which requires a balancing several social, economic and environmental factors.

5.1.6.3 The Pit is not a national heritage site and has never been given any special protection under the NHRA or the now repealed National Monuments Act, No 28 of 1969. Similarly, Jagersfontein has not been afforded any special protection as a town.

5.1.6.4 Regardless of its heritage status, in the long term, the presence of the Pit poses a significant risk to the Jagersfontein town and the various heritage buildings in the town, particularly those buildings situated close to the Pit due to the back breaking.

5.1.6.5 As noted above, SAHRA has declined the offered donation of the Pit by JD, due to the likely risks and liability posed by it. It is submitted that it would therefore be unreasonable for SAHRA to require JD, as a private company with diamond processing as its objective, to continue maintaining the Pit as a heritage site in its current state without backfilling. Given the risks noted above and raised by SAHRA, it is further submitted that it would be unreasonable for SAHRA to contend that the Pit in its current state has tourism potential.

5.1.6.6 Jagersfontein is furthermore extremely isolated. After DBCM ceased operation in 1970 in Jagersfontein, it developed into a "*ghost town*". Save for 1 small bed and breakfast, which sleeps 6 people, there are no other hotels or even restaurants that would encourage a tourist to spend more than a few hours in the town.

5.1.6.7 The Pit was open for viewing for a period. Despite this, Jagersfontein did not develop into a tourist destination and no tourist infrastructure needed to sustain a tourism industry was established. The logbook of visitors to the Pit between 2004 and 2011 shows low numbers of visitors.

5.1.6.8 For reasons stated above, access to view the Pit without backfilling is simply not an option. Two viewing platforms have previously fallen into the Pit. The present viewing platform has been closed to both public and mine staff since April 2011 based on an engineer Rodney van Dam of MRH Consulting Engineer's recommendations. This stemmed from concerns around both the structural integrity of the platform itself; and the stability of the ground on which it is located. Images of a previous viewing platform that fell into the Pit bear testimony to the gravity of these concerns.[7]

5.1.6.9 If access was allowed prior to the Pit's backfilling, the public would need to be advised of the significant risks of falling into the Pit. No matter how interesting the Pit's history may be, it is unlikely that tourists would travel to a remote town like Jagersfontein to view the Pit when faced with such dangers.

[7] Geotechnical Report Figures 4-8 and 4-9.

5.1.6.10 Jagersfontein's lack of tourist potential is enhanced by the fact that several heritage buildings in the Town have burnt down or are in a state of disrepair. In January 2010 the old Municipal Town Hall, a building constructed in 1892, was apparently torched in riots against the local municipality and extensively damaged. The Municipal Building, also a Baker building, located in the same square, is also in a state of disrepair.

5.1.6.11 Whilst the Pit and Jagersfontein have historical and heritage value, it is by no means unique. The Kimberley Pit is in the same region. Kimberley is situated between several towns and can be accessed from numerous routes and would be an obvious tourist destination that would compete with the Jagersfontein Pit.

5.1.6.12 Any revival of Jagersfontein would require significant investment from the State, as discussed below.

5.1.6.13 If the Pit is backfilled, its rim will be preserved and remain visible.

5.1.6.14 Should adequate financial provision be made in the future, the development of the Pit as a tourist attraction will therefore remain a viable option. To ever revive Jagersfontein and develop it as a tourist destination would however require significant capital investment from the State.

5.1.6.15 However, JD have recently taken it upon itself to implement the following heritage mitigation measures:

- repairing and restoring the Jagersfontein Museum to allow visitors to view artefacts, documents. The Museum was previously lotted and historical artefacts removed. Photographs of the work undertaken to date have been uploaded and are labelled *"Photos of upgraded Jagersfontein Museum"*;

- investigating the possibility of digital geo-heritage preservation and virtual relating mapping, to ensure that the scenery of the open Pit and its history is forever captured. JD is in discussions with geology specialists regarding this. The virtual reality will make it possible to view the Pit, with a virtual reality helmet, in an immersive environment enhancing the viewer's experience. This will allow viewers to experience a virtual reality tour of the Pit from the gantry; have a visual experience of the Pit prior to its backfilling; and gain knowledge of both historical mining, the Tailings Operation and the Pit. It will also allow for geo-education and geo-heritage uses at universities, in association with the GSSA. Examples of such videos are: https://youtu.be/4M92kfnpg-k; and https://www.glencore.com/kcc-360-en/index.htm; and

- small vendor stalls for local crafts to be sold is planned and a traditional kitchen that prepares traditional food. Local interested parties will be invited to establish a local café at the museum premises to further enhance tourist experience.

5.1.6.16 JD has furthermore compiled the HMP, which has been uploaded onto SAHRIS.

5.1.6.17 *Potential Government investment into Jagersfontein*

5.1.6.17.1 SAHRA has declined the offer to donate the Pit and previously confirmed during the initial application to backfill the Pit during 2012 that it does not have the financial

resources to attempt to stabilise the Pit, nor would the Free State Provincial Heritage Resources Agency, should the entire Jagersfontein Town be declared a specially protected heritage area.

5.1.6.17.2 It would fall on the KLM as the government authority responsible to develop Jagersfontein as a tourist destination. As is clear from the neglected buildings in the Jagersfontein Town, this has not yet happened to date.

5.1.6.17.3 The KLM is in financial dire straits and is battling to provide basic services to residents within its jurisdiction.

5.1.6.17.4 Notwithstanding that the KLM LEDS for 2013 to 2018 indicates KLM's intention to ensure the continued annual growth of the tourism industry by 5%,[8] no identified project have been designated for Jagersfontein in the LEDS. The LEDS has been uploaded to SAHRIS.

5.1.6.17.5 The KLM Annual Report 2017 / 2018 provides that KLM "*plans to focus development on tourism and mining as untapped economic sectors that can contribute to economic growth of the municipality*".[9].

5.1.6.17.6 Similarly, the KLM IDP provides *inter alia* that –

5.1.6.17.6.1 "*[t]he Trans-Gariep tourism route attracts visitors and there is great potential at Gariep Dam, Bethulie, Philippolis, Jagersfontein and Fauresmith"*;[10] and

5.1.6.17.6.2 as one of the pillars, the harnessing and increase of tourism potential, a general IDP Project is included to review the Tourism Strategy and development of support programme and marketing programmes for all tourism issues in Kopanong .[11]

5.1.6.17.7 Despite the above no specific projects have been identified. The following was noted in the KLM Annual Report 2017 / 2018 and again in the KLM Annual Report 2018/2019 (being the latest annual report available) regarding local economic development performance overall: "*[d]ue to its current financial position, Kopanong local [sic] Municipality is unable to commit itself on capital projects even though they are captured in both the IDP and LED Strategy therefore the successful implementation of these projects depends on funding from sector department*".[12] The KLM Annual Report 2018/2019 does not, as in the KLM Annual Report 2017, note the focus of tourism is still planned.

5.1.6.17.8 In respect of the identified pillar to minimise the impact of the declining mining sector and ensure that the existing mining potential is harnessed, the KLM IDP's only objective is "*partnering with Jagersfontein Mine, to promote mining beneficiation and explore more job opportunities"*, which reflect the economic importance of the Tailings

[8] LEDS page 44.

[9] KLM Annual Report page 8.

[10] KLM IDP page 22.

[11] KLM IDP page 45.

[12] KLM Annual Report 2017 and 2019, page 65.

Operations. A very generic action is included under this pillar: "*implement mine tourism initiatives"*, with not specific plan being highlighted.[13]

5.1.6.17.9 Copies of the KLM Annual Report and KLM IDP have been uploaded to SAHRIS as additional documents and labelled as such respectively.

5.1.6.17.10 The SEIA includes various proposals to introduce Jagersfontein as a tourist destination, which JD is considering and investigating. It would however be unreasonable to require JD to ensure the ongoing promotion of Jagersfontein as a tourist destination. This is given that JD is not a company specialising in tourism but mining. The Tailings Operations life is furthermore very limited (under 10 years); once the Tailings Operations are closed JD will not receive any income. It would effectively be a shell company, with only Portion 15 as an immovable asset and environmental liabilities for post-closure management and would not be able to continue managing and financing tourism initiatives.

5.1.6.17.11 As noted in the SEIA: "*to develop the tourism potential of the Jagersfontein Town would require huge capital investment by the Government through public-private partnerships. A tourist visiting the area might be sorely disappointed to find that there are no hotels in Jagersfontein, no coffee shops, or restaurants, and that the old mining museum, located on JD's property roughly 50 meters from the Pit, is closed for public viewing*". [14]

5.1.6.17.12 Any initiatives to implement ongoing projects to promote Jagersfontein as a tourism venture in the long-term would need to be led by KLM and SAHRA. As noted above, it appears unlikely that these government authorities would have the financial capacity to commit to such long-term projects.

5.1.6.17.13 Whilst the ICT has remaining trust funds for community upliftment projects, the needs of the generally indigent Jagersfontein community is great. Jagersfontein has severe water shortages, limited waste removal services; and the sewage treatment plant is not maintained by KLM. Schools and healthcare facilities in the area regularly experience water shortages and power outages for extended periods. The hospital have medical supplies and medicine shortages; and the schools have limited facilities. [15]

5.1.6.17.14 The rate for people living in poverty in KLM is approximately 40.2%. Employment statistics for Jagersfontein reflect that 72% of the working population are either unemployed, discouraged jobseekers or economically inactive. The education statistics for the KLM show that 13.4% of the population aged 20 or more received no schooling, and 29.2% of the adult population are illiterate. Less than 10% of the population in the KLM have received some high school education, and a majority (representing 70% of the population) have less than a high school education. [16]

5.1.6.17.15 The trustees would need to balance the necessity for tourism projects against several other important public benefit / community upliftment projects (including education,

[13] KLM IDP page 44. JD is named as one of the three major natural resource companies providing job creation in the KLM 2018 / 2019 Annual Report.

[14] Page 20 of the SEIA.

[15] Page 29 - 30 and 37 to 39 of the SEIA.

[16] Page 36 of the SEIA.

feeding schemes, assisting in the supply of basic services and healthcare). The remaining funds of the ICT would also need to be used carefully, to ensure that projects are lasting, given the limited life of the Tailings Operations and tourism projects in Jagersfontein have a high risk of not being successful.

5.1.7 Groundwater impacts contained

5.1.7.1 GHT concluded that simulations indicate limited pollution plume migration from the filled Pit due to a few reasons:

5.1.7.1.1 filling of the Pit would not reach the surface and the base of the upper aquifer, as the evaporation by far exceeds precipitation combined with groundwater influx;

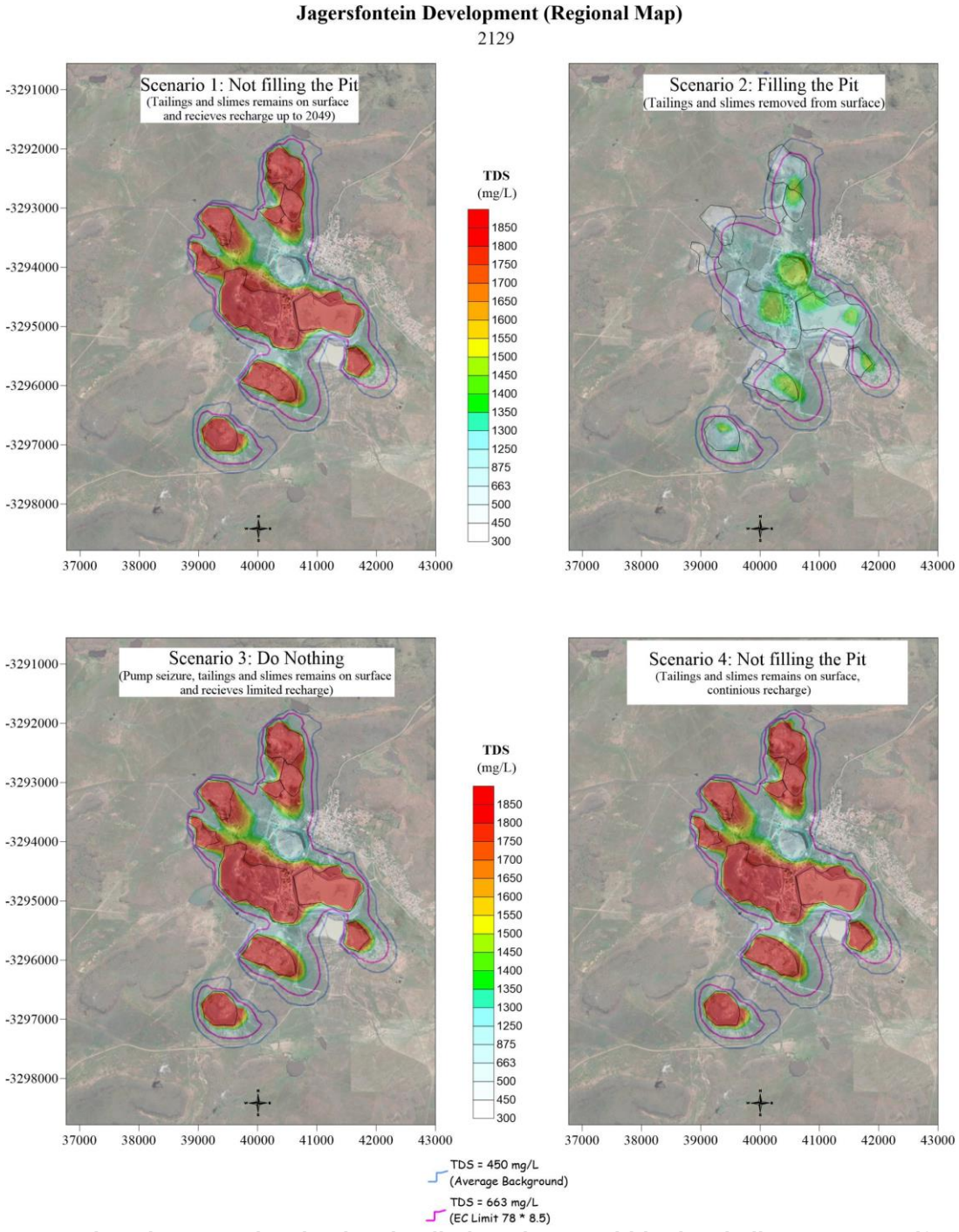
5.1.7.1.2 the deeper and upper aquifers are not interconnected. As there is no interconnection between the shallow aquifer and the Pit or Shaft, no pollution can flow from the Pit or Shaft upwards to the surrounding shallow aquifer;

5.1.7.1.3 geohydrological properties of the slimes (low permeability and moisture retention);

5.1.7.1.4 the lateral pollution plume migration remains localized due to the low rainfall and recharge, which causes pollution to spread, geological properties of the pit walls, which inhibit pollution movement; and

5.1.7.1.5 if evaporation is considered (which was not simulated due to complexities and model stability), it is envisaged that the groundwater table in the Pit will even be lower, whereby groundwater gradients would remain towards the Pit and thus further have a localising effect on the pollution plume migration.

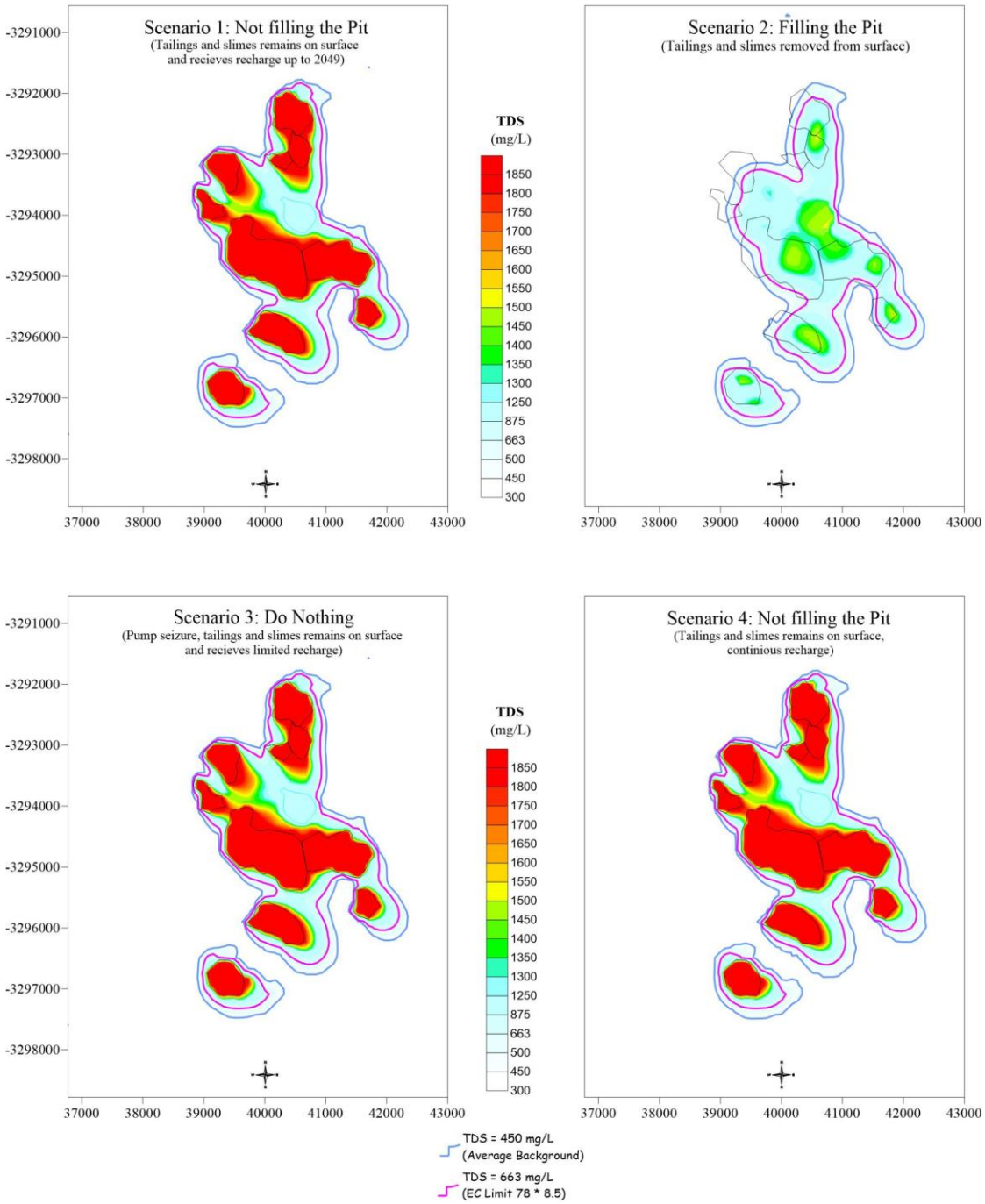
5.1.7.2 GHT Consulting provided clear models (see below), showing the impacts of pollution to the groundwater resources. It was also indicated that the removal of tailings from the surface of the surrounding environment and disposing thereof into the Pit will reduce impacts on surface water resources and improve hydrology. It has been proven since 2013 that the Tailings Dumps have an impact on the surface water resources and thus, their removal from the surface and disposing thereof inside a centralized location will alleviate the impacts on both the surface water resources and the risks of pollution to the upper/shallow aquifer. If backfilling does not occur these impacts are likely to continue.



Comparison between the simulated pollution plumes within the shallow upper aquifer of Scenarios 1 to 4 (year 2129)

Jagersfontein Development (Regional Map)

2129



The contact between Valley Aquifer and lower dolerite sill does not extend to or intersect the Pit

6 PUBLIC PARTICIPATION

6.1 A thorough PPP was held for the Section 38 Application, involving the following:

6.1.1 a household survey, conducted in November 2019, comprising 69 households randomly selected and located in Jagersfontein Town, Itumeleng and Charlesville, which neighbour the proposed project site. This sample represented a 10% sample size of the population in the Jagersfontein communities;

6.1.2 several key informant interviews to inform the SEIA, including the Ward Councillor of Ward 6, the Captain of the Jagersfontein Police Station, and Head of Department at Boaramelo Combined School, the Chairman of the Farmers Association, the Manager of the Itumeleng Community Trust, teachers at the After Day Care Centre, and a doctor at the Diamant District Hospital;

6.1.3 two public consultation meetings, held at the Mayibuye Community Hall in Itumeleng on 26 November 2019 and 2 December 2021:

6.1.3.1 the meeting held in December 2021 was well attended by approximately 100 Community members, as well as the Mayor of Kopanong, the Ward Councillor and JD Management;

6.1.3.2 meeting participants were handed hard copies of a Background Information Document ("**BID**");

6.1.4 a public notice was published in the Bloemfontein Courant on the 3 December 2021. This notice aimed to inform the public about the Proposed Project;

6.1.5 the public notice and the BID aimed to provide information about the Section 38 Application; and that the specialist reports were available for review at the Jagersfontein Library. They also served to inform the public that electronic copies of the specialist reports were also available for review on request from Turn 180 Environmental Consultants;

6.1.6 following the Community meeting held in 2021, Community members were also provided with the opportunity to review and comment on the following specialist reports, which were available for public review at the Jagersfontein Library: Civil Engineer Design Drawings and Report; Integrated Water and Waste Management Plan; Waste Classification; GIA; HIA and SEIA;

6.1.7 the public review period ran from between 10 December 2021 and 4 February 2022; and

6.1.8 several written comments were submitted by individuals expressing their views on the Section 38 Application.

6.2 The various documents relating to the PPP form part of the SEIA, including the attendance registers and minutes of the meetings; the BID and public notice; and the written comments submitted. (See Appendixes 4 – 10 of the SEIA).

6.3 The Gerber Objection alleges that the PPP was insufficient. This is denied, as the PPP clearly accorded with the requirements of the Promotion of Administrative Justice Act 3 of 2000. Reference is made to JD's detailed response to the Gerber Objection.

7 FURTHER APPLICATIONS

7.1 JD has submitted a WULA under the National Water Act, No 36 of 1998.

8 CONCLUSION

8.1 Due to the environmental risks associated with keeping the Pit open; impossibility of stabilising it by alternative means; low tourism potential; and lack of government capacity, it is submitted that the Section 38 Application should be granted as the Proposed Project represents the only current feasible and sustainable solution.

8.2 It is further stressed that in deciding the Section 38 Application, SAHRA cannot only consider the heritage value of the Pit. A heritage resource falls within the definition of the "environment" under NEMA. SAHRA is therefore obliged to consider the principles in NEMA in any decision relating to heritage resources. These principles include *inter alia* that –

8.2.1 Development must be socially, environmentally and economically sustainable;

8.2.2 Sustainable development requires consideration of all relevant factors, including those ones enumerated above and –

8.2.2.1 the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied

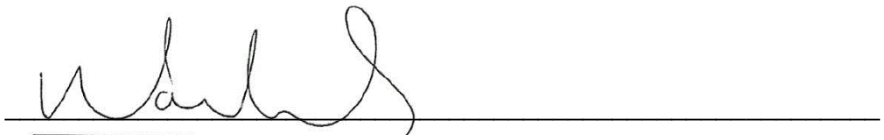
8.2.2.2 that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and

8.2.2.3 environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of best practicable environmental option.

8.3 Under the NHRA, SAHRA is obliged not to take any action that adversely affects a heritage resources, unless it is satisfied that there is no prudent alternative to taking the action and that all measures that can reasonably be taken to minimise the adverse effect will be implemented.[17] Given the information included in the Section 38 Application, it is clear that granting of the permit would be reasonable.

8.4 Under the circumstances, JD requests that the Section 38 Application be granted.

[17] Section 9(3)(e) of the NHRA.



Marius De Villiers

On behalf of

JAGERSFONTEIN DEVELOPMENTS (PTY) LTD