Socio-economic Impact Assessment:

Backfilling of the Jagersfontein Pit

Report prepared for:
Jagersfontein Developments (Pty) Ltd.

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DISCLAIMER

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EXECUTIVE SUMMARY

This report provides a Socio-economic Impact Assessment ("SEIA") of the proposal by Jagersfontein Developments ("JD") to backfill the Jagersfontein Pit present on Portion 15 of the Farm Jagersfontein 14IS. This Project aims to restore the Pits stability, eliminate associated safety risks, and provide JD with a new Tailings Storage Facility ("TSF").

Given that the historically mined pit is the largest hand-excavated hole in the world, the Pit is considered a heritage resource under section 38 of the National Heritage Resources Act ("NHRA").

The decision by the South African Heritage Resource Agency ("SAHRA") to grant JD Permit 308 (case 508) under section 35(4) of the NHRA, requires SAHRA considering both the heritage value of the Pit, and the socio-economic impacts of the proposed Project.

In support of JD's application to SAHRA to backfill the Pit, Surveya Global ("Surveya") prepared a Socio-economic Impact Assessment ("SEIA") that considers both the positive and negative impacts of backfilling the Pit on the communities of Jagersfontein Town, Itumeleng, Charlesville and Fauresmith.

Socio-economic impacts were identified through two processes namely; a public consultation process and a socio-economic baseline study that included; a household survey comprising 69 households, and a number of key informant interviews.

This report describes the socio-economic environment of the Jagersfontein communities. It details the concerns raised by community members, and it presents the potential socio-economic impacts and associated mitigation measures of the proposal by JD to backfill the Jagersfontein Pit.

In the identification, rating and mitigation of impacts, impacts are grouped according to the following impacts:

- Economic;
- Social;
- Safety and health; and
- Cultural and heritage.

Each impact grouping was assessed against the socio-economic baseline data and the proposed project description, and includes mitigation measures to reduce and manage negative impacts, and to enhance potential positive impacts.

Several economic impacts were identified and include:

- Job creation and employment opportunities;
- Local procurement;
- Improved skills development and training;
- Contribution to Government Revenue and the fiscals of Local Municipalities;
- Tensions over limited employment opportunities and procurement contracts; and
- Development of the tourism potential of the Jagersfontein Pit.

The following social impacts were identified:

- Community development through the activities of the Itumeleng Community Trust (i.e. Community Development Plan commitments);
- Social unrest and violent protests;
- Prevent damage to and the relocation of properties in close proximity to the Pit; and
- Improved community identity and sense of wellbeing.

Health and Safety impacts identified include:

- Increased community safety and the elimination of vibration and break-back risks; and
- Noise and air quality impacts.

Identified cultural heritage impacts include:

- Loss of the expansive visual depth of the Pit; and
- Loss of the heritage value of the Pit.

Refer to Table 0-1 for a summary of the impact rating, and mitigation measures.

Overall, none of the potential socio-economic impacts identified during the socio-economic impact assessment warrant the Project not proceeding.

However, given that the communities neighbouring the Project are not in favour of JD's proposal to backfill the Pit, from a socio-economic point of view, the greatest social risk to the Project proceeding is the potential impact of social unrest and violent protests.

In the two public consultation meetings held at the Mayibuye Community Hall in Itumeleng on the 26th November 2019 and the 2nd December 2021, respectively, it was strongly suggested that JD should not be granted a permit by SAHRA to backfill the Pit, which will destroy the heritage value of the Pit, and any potential tourism opportunities in the area. These sentiments were strongly echoed in the household survey where 72.46% of the households interviewed felt that the proposal by JD to backfill the Pit would negatively affect their households.

According to the communities in Jagersfontein backfilling the Pit will destroy the heritage value of the Pit, and any potential tourism opportunities in the area, and these negative impacts far outweigh the value of JD continuing its operations for a further eight years in the area. These sentiments stem primarily from poor relations between JD and the neighbouring communities.

At both community meetings, disgruntled community members aired their concerns with JD's lack of commitment to community development. Community members are of the opinion that JD discontinue operating until a Social Labour Plan is prepared, and the company commits to implementing community development projects independently of the Itumeleng Community Trust (ICT), which JD established in 2012.

Even though JD has spent R17,556,718.50 on community development programmes since 2012, the Trust is accused by community members of not serving the needs and interests of the neighbouring communities.

Given that community members are not in agreement with the proposed application, if JD is granted the application under section 38 of the NHRA, JD will need to commit to improving community stakeholder relations and building trust with the neighbouring communities in order to prevent and mitigate social unrest and violent protests.

This will require JD implementing the following mitigation and management measures recommended in this report alongside the following management plans:

- Heritage Management Plan;
- Integrated Waste and Water Management Plan;
- Air Quality Management Plan;
- Stakeholder Engagement Plan and Grievance Procedure;
- Human Resources Policies and Procedures;
- Community Development Plan; and
- Closure Plan.

Should the application under section 38 of the NHRA be granted to JD to backfill the Jagersfontein Pit, this report will assist JD with monitoring and managing potential future project impacts.

Table 0-1: Socio-Economic Impact and Mitigation Summary Table

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
ECONOMIC IMPACTS						
Job creation and increased employment opportunities	Moderate 12 3	High 13 4	• Draw on local skills registers and employee databases to employ local workers if qualified applicants with the appropriate skills are available. • Formalise local employment procedures by developing a recruitment policy. • Ensure Contractors' Agreements make provision for contractors to hire locals if the skills are available. • Work with community representatives to develop open and transparent recruitment procedures that are disclosed to community members. • Use various mechanisms to advertise job opportunities in local communities. • Continue to provide skills development training for local people through internships, scholarships, and/or vocational and skills training programmes.	Recruitment policies and procedures	• HR Manager	Prefeasibility On-going
Improved skills development and training	Moderate 10 3	High 13 4	• Undertake a skills analysis to determine the level of skills in the community, and identify semi-skilled community members. • Assist skilled community members with acquiring certificates and qualifications for formal employment. • Develop and implement skills development and training programmes	Community Development Plan	• An Economist can undertake a skills analysis • Community Relations Manager	On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			that target both employees and the broader local population including Jagersfontein, Itumeleng, Charlesville and Fuaresmith. • Continue to provide and facilitate the training of local people through internships, scholarships, and/or vocational and skills training programmes.			
Contribution to Government revenue and the fiscals of Local Municipalities	High 13 4		• The Tailings Operation will not be able to influence Government spending from these earnings, nor will the operation be able to stipulate conditions for payment. As such, no mitigation measures are recommended for this impact.			
Tensions over limited employment opportunities and procurement contracts	High 13 -4	Moderate 10 -3	• Work with community representatives to prepare an open and transparent recruitment process that is widely disclosed to community members; • Prioritise employment of local community members within the Project Area; • Provide employment options that allow a range of people to benefit from employment opportunities, where possible (e.g., non-shift or part-time work); • Ensure contractors hire local community members; • Use various mechanisms to advertise employment opportunities in neighbouring communities; • Maintain recruitment and employment	Recruitment policies and procedures	• HR Manager	Prefeasibility On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			records, distributing short-term opportunities to as many community members as possible; and • Regularly provide feedback to communities including disclosing any updates to employment figures.			
Development of the tourism potential of the Pit	Minor 8 2	Moderate 13 3	• Refurbish the Pit museum and gantry. • Appoint a museum curator and additional support staff to manage the Pit museum and the gantry. • Develop a Heritage Management Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein. • Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area. • Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and skills	Heritage Management Plan Community Development Plan Stakeholder Engagement Plan	• Tourism/Cultural Heritage Specialist • Community Relations Manager	Prefeasibility On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			applicable to the tourism industry.			
Community development through the activities of the Itumeleng Community Trust	Moderate 12 3	High 15 4	• Engage with the Community Working Committee, and provide regular feedback on ICT initiatives. • Undertake a community needs analysis to identify priority areas for community development. • Prepare a Community Development Plan (CDP) in consultation with Local Government and the ITC Community Working Committee. • Implement CDP programmes in partnership with the Local Government. • Where feasible, donate project-related infrastructure to the Local Municipality and neighbouring communities.	Community Development Plan Stakeholder Engagement Plan	• Community Relations Manager	On-going
Social unrest and violent protests	High 14 -4	Moderate 10 -3	• Develop a Stakeholder Engagement Plan (SEP) that aims to assist JD with improving communication between the neighbouring communities and JD;	Stakeholder Engagement Plan Community Development Plan	• Operations Manager • HR Manager • Community	On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			• In consultation with local community representative develop a Community Development Plan (CDP), to determine sustainable economic development programmes that seek to enhance social and economic development in the area; • Consider efforts to restructure the Itumeleng Community Trust (ICT) so that it functions more transparently, and as a development partner in the communities of Jagersfontein.		Relations Manager • Security Manager	
Prevent damage to and the relocation of properties in close proximity to the Pit	High 13 4		• Prior to backfilling of the Pit, monitor vibrations and break back impacts on properties in close proximity to the Pit. • No further mitigation measures are required to prevent the relocation of properties within the 100m zone of influence.	Grievance Procedure	• Community Relations Manager	Pre-fesibility
Improved community identity and a sense of wellbeing	Minor 9 2	Moderate 12 4	• Refurbish the museum and the gantry, and invite the communities of Jagersfontein and Fauresmith to a reopening ceremony inaugurated by the Mayor of Jagersfontein. • Provide transport for students at the various schools in the area, and possibly even in the Region, with guided tours to the museum and the Pit. • Develop a campaign to market the Pit. This might include advertising the Pit in newspapers, on local radios, and in tourism brochures and pamphlets. • Continue to train local people through	Heritage Management Plan Community Development Plan	• HR Manager • Community Relations Manager • Tourism/Cultural Heritage specialist	Pre-feasibility On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			internships, scholarships, and/or vocational and skills training programmes in courses and skills applicable to the tourism industry.			
Improved community safety and the elimination of vibration and break back risks	Moderate 8 3	High 13 4	• Develop a Closure Plan in consultation with Local Government, and community representatives, that considers sustainable ways to ensure the safety of community members and livestock post closure. • Maintain the perimeter fence around the Pit to minimise injuries and fatalities. • Monitor and manage access to the Pit museum and gantry infrastructure. • Restrict public access to other sections of the Pit and project related infrastructure. • Develop a procedure to address trespassing, and livestock grazing, in restricted areas.	Security and Safety Plan (i.e. Community Health and Safety Plan) Closure Plan	• Operations Manager • Security Manager	On-going
Loss of expansive visual depth of the	High 14		• This impact cannot be mitigated and is permanent.			

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
Pit	-4					
Noise and air quality impacts	Moderate 11 -3	Minor 8 -2	• Dust emissions will be managed by an Air Quality Management Plan. • Noise levels will be kept to recommended industrial standards. • A grievance management mechanism will be in place to receive and address dust and noise related complaints. • Restrict noisy activities to standard working hours. • Noise and dust impacts will be minimised with project closure, and addressed in the Closure Plan.	Air Quality Management Plan Closure Plan	• Environmental Officer	On-going
Loss of the heritage value of the Pit	High 13 -4	Moderate 10 -3	• Develop a Heritage Manage Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein. • Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area.	Heritage Management Plan	• Tourism/Cultural Heritage specialist • Community Relations Manager	Pre-feasibility On-going

CONTENTS

1. Introduction

Jagersfontein Developments (Pty) Ltd ("JD") owns the Portions 15 and 16 of the Farm Jagersfontein 14 IS and leases a section of the remainder of Farm Jagersfontein 14 IS. Its operations are located in Jagersfontein Town a small town in the Free State situated on the R706, 110km south-west of Bloemfontein (Figure 1-1), and involves the processing of eleven Tailings Dumps, which were previously owned by De Beers Consolidated Mining Ltd ("De Beers"). In 2010 the Tailings Dumps were sold by De Beers to JD as moveable assets under a Sale of Assets Agreement, and included the historically mined Jagersfontein Open Pit (the "Pit") present on Portion 15 of the Farm Jagersfontein 14IS.

Figure 1-1: Locality map of Jagersfontein Town
(Source: https://cdn.britannica.com/82/130582-050-3D0C37FD/State-province-SAf.jpg)

JD has identified an opportunity to rehabilitate the Pit through a backfilling process that aims to restore the Pits stability, eliminate associated safety risks, and provide JD with a new Fine Tailings Storage Facility ("FTSF").

The Pit has a surface area of 19.635ha, and was created by various parties over a period of 40 years from 1870. Given that the historically mined pit is the largest hand-excavated hole in the world, the Pit is considered a heritage resource under the National Heritage Resources Act ("NHRA").

The decision by JD to apply to the South African Heritage Resource Agency ("SAHRA") for permission to backfill the historically mined pit, was taken after a geo-technical assessment completed in 2012 by geotechnical and structural engineers, Dr. Graham Howell and Mr. Adrian Meintjies of SRK Consulting ("SRK"), confirmed that the Pit is unstable, and in the long-term presents a safety risk to local residents in Jagersfontein Town.

After undertaking extensive and on-going assessments Dr. Howell and Mr. Meintijies confirmed that using coarse and fine tailings for the backfilling of the Pit is the only viable and practical way to ensure the Pits stability and eliminate associated safety risks (2012).

The decision by SAHRA to grant the application under section 38 of the NHRA, requires SAHRA considering both the heritage value of the Pit, and also the social and economic impacts of the proposed project.

In support of this permit, Surveya Global ("Surveya") prepared a Socio-economic Impact Assessment ("SEIA") (this report) that considers both the positive and negative impacts of the proposed backfilling of the Pit.

Socio-economic impacts were identified through two processes namely;

1. Public consultation: Community meetings were held in 2019 and in 2021,
2. Socio-economic baseline study: In November 2019 a socio-economic baseline study comprising key informant interviews and a household survey that included 69 randomly selected households was completed.

Both these processes form an integral component of this SEIA.

This report describes the socio-economic environment of the Project Area. It details the concerns raised by community members, and it presents the potential socio-economic project impacts and associated mitigation measures.

Should the application be granted by SAHRA to JD to backfill the Jagersfontein Pit, this report will assist JD with monitoring and managing potential future project impacts.

1.1 Objectives and Scope of Work

The objectives of the SEIA include the following:

- Develop a socio-economic baseline of the study conditions prior to the project implementation. Keeping in mind that the social context includes impacts derived from intermittent mining that extends across a period of more than 100 years;
- Collect socio-economic baseline data within the directly impacted Jagersfontein communities with the aim to determine potential project impacts;
- Build a pre-project socio-economic baseline from which to measure project impacts;
- Identify key project stakeholders within the directly impacted communities;
- Allow stakeholders to participate in the baseline data collection process, and to assist with identifying potential project impacts and sustainable mitigation measures;
- Identify potential negative and positive socio-economic impacts associated with the proposal by JD to backfill the Jagersfontein Pit. This will be informed by the Impact Assessment methodology as illustrated in section 2.7;
- Provide details on the public consultation process with Interested and Affected Parties (I&APs) including summaries of issues and concerns raised by community members; and
- Prepare a cost-effective and practical Social Management Plan ("SMP") with the aim to assist JD with enhancing positive project impacts and mitigating negative impacts, should the application be granted by SAHRA for the backfilling of the Pit.

1.2 Report Structure

The SEIA Report is structured as follows:

- Section 2: Legal Framework

- Section 3: Impact Assessment Methodology
- Section 4: Project Description
- Section 5: Socio-economic Baseline
- Section 6: Potential Project Impacts
- Section 7: Management Plans and Long-Term Monitoring
- Section 8: Conclusion and Recommendations
- Section 9: Appendices

1.3 Social Specialist

The consultant involved in the study has prepared impact assessments for over 10 years.

Table 1-2: Details of social specialist involved in the impact assessment

Consultant	Qualifications and of Expertise
Tandi Kolbe **BA Hons, MA, Sociology** (Consultant)	Tandi Kolbe specialises in the areas of: • Socio-economic Impact Assessment • Public consultation and stakeholder engagement • Resettlement Action Planning • Community development and livelihood restoration Tandi assisted with the development of the study, focusing on the baseline studies, stakeholder consultations and identification of the impacts and management, mitigating and monitoring requirements. Refer to Appendix 1 and 2 for a copy of Tandi Kolbe's CV, and a Declaration of Independence.

1.4 Legal Framework

For purposes of this impact assessment the following Government departments have been identified as playing a key role in the permit application process:

- South African Heritage Resource Agency: the lead agency reviewing the SEIA in support of a permit application submitted by JD for the backfilling of the Jagersfontein Pit;
- The Xhariep District Municipality ("XDM") and Kopanong Local Municipality ("KLM"): provided input into the social baseline study, and sought to assist with community consultation; and
- Department of Water and Sanitation ("DWS"): required to approve the Integrated Water Use License Application ("IWULA") for the proposal by JD to backfill the Jagersfontein Pit.

Some of the relevant government policies, and strategies that have a bearing on the assessment of the proposed Project include:

- National Development Plan 2030 ("NDP"); and
- District and Local Integrated Development Plans ("IDPs").

1.5 Company polices

The recommendations and identified mitigation measures are aligned with Jagersfontein Developments' company policies, and founding documents, including:

- The Community Trust Deed (2012);
- Employment Equity Plan (2017 – 2022); and
- Environmental Policy (2012).

2. Impact Assessment Methodology

The requirements set out by NEMA emphasize the importance of collecting social baseline information on livelihoods, health, culture, gender, ecosystem services, infrastructure and cultural heritage in order to identify, manage and mitigate potential positive and negative project impacts.

For the purpose of this assessment secondary and primary baseline data were gathered.

2.1 Secondary Data

The study conducted a literature review to seek and gather secondary data. Documents reviewed include the following:

- Documents provided by JD. Some documents include; Jagersfontein Pit Backfill Preliminary Pit Design (SRK, 2019), Draft Environmental Scoping Report (Turn 180 Environmental Consultants, 2019), and JD Labour Figures (2021);
- Itumeleng Community Trust; List of Projects (2012 – 2019);
- Integrated Water and Waste Management Plan (Turn 180 Environmental Consultants, 2019);
- Socio-economic and demographic statistics sourced from Statistics South Africa's 2011 Census data;
- Integrated Development Plans (IDPs) of the Xhariep District and the Kopanong Local Municipality; and
- Available maps and satellite imagery.

A detailed list of the documents reviewed is presented in Appendix 3.

2.2 Primary Data Collection

Using a variety of research tools primary data were collected for the socio-economic baseline study between 12th and 16th November 2019. These research tools included key informant interviews, and a household survey, which are described in detail below.

2.2.1 Key Informant Interviews

Key informant interviews were held with, 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.

These interviews sought to verify and expand on data gathered during the literature review, and household survey.

2.2.2 Household Survey

A household survey was conducted on a sample of 69 households located in Jagersfontein Town, Itumeleng and Charlesville, which neighbour the proposed project site. These communities were selected based on their close proximity to the proposed Project Area (refer to Table 2-1).

The 69 households included in the survey were randomly selected, and based on the 2016 Community Survey, this sample represented a 10% sample size of the population in the Jagersfontein communities.
The survey collected quantitative and qualitative data at a household level on population demographics, land, housing, health, education, water and sanitation, natural resource use, livelihood strategies, employment, community dynamics, and perceptions about the proposed Project.

The survey was undertaken using an automated household survey process administered by four local fieldworkers who participated in a half-day training workshop on household survey research methods. During the training workshop the questionnaire was piloted and modified to suit the local context.

Table 2-1: Summary of the number of households included the survey

Community	Total Number of Households surveyed
Itumeleng	40
Jagersfontein Town	20
Charlesville	9
Total	**69**

(Source: Socio-economic baseline study, 2019)

2.3 Data Analysis

In each of the communities, comparable qualitative social data were collected. Primary data gathered from the key informants, as well as, observations made by the study team on livelihood strategies, infrastructure, services and amenities were transcribed. Data from the household survey were captured in Microsoft Excel for analysis.

In order to strengthen and increase the levels of confidence in the qualitative findings of the social study, primary data was triangulated with secondary data and baseline indicators were assessed, validated and analysed.

2.4 Public Consultation

During the socio-economic assessment, two public consultation meetings were held with community members in Itumeleng.

The first public consultation meeting was held on 26th November 2019 at the Mayibuye Community Hall in Itumeleng. Refer to Appendix 4 for a copy of the Attendance Register and Appendix 5 for a copy of the meeting minutes.

The second public consultation meeting was held on 2nd December 2021 at the Mayibuye Community Hall in Itumeleng. Refer to Appendix 6 for a copy of the Attendance Register, and Appendix 7 for a copy of the meeting minutes.

At the public consultation meetings community members were informed about the proposal by JD to backfill the Pit. This included informing communities about the SAHRA permit, and the IWUL Applications.

During the public meeting held in November 2019, preliminary SEIA impact were presented to 15 meeting participants who were provided with the opportunity to comment on identified potential negative and positive project impacts.

Even though the meeting was poorly attended, the 15 participants who attended the meeting, asked many questions, and there was robust engagement and discussion on the proposed Project.
Unlike the public meeting held in 2019, the meeting held in December 2021, was well attended by approximately 100 community members, as well as the Mayor of Kopanong, the Ward Councillor, JD Management, and the following project specialists:

- Environmental
- Geohydrologist
- Socio-economic

At this public meeting all COVID-19 safety protocols were adhered to. Meeting participants were required to wear masks, and sanitise their hands before entering the meeting venue.

Community members attending this meeting refused to sign the attendance register, refer to Appendix 5.

The comments raised during both the public consultation meetings (refer to Appendix 4 and 6) were similar to those raised by households participating in the household survey (November, 2019), and broadly covered the following themes:

- Stakeholder engagement;
- Community development;
- Employment opportunities;
- Cultural heritage; and
- Tourism opportunities.

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 we available for public review at the Jagersfontein Library:

- Civil Engineer Design Drawings and Report;
- Integrated Water and Waste Management Plan;
- Waste Classification;
- Geohydrological assessment and modelling reports;

- A motivation and formal application to SAHRA;
- A Heritage Impact Assessment; and
- Socio-economic Impact Assessment.

At the public meeting held on the 2nd December 2021, meeting participants were also handed hard copies of a Background Information Document (BID). Refer to Appendix 7.

In keeping with the public disclosure requirements of NEMA, a public notice was published in the Bloemfontein Courant on the 3rd December 2021. This Notice aimed to inform the public about the proposed project. Refer to Appendix 8.

The public notice (Appendix 9) and the BID (Appendix 10) aimed to provide information about the proposed application, and the specialist reports available for review at the Jagersfontein Library. These documents 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.

The public review period ran from between 10th December and 4th February. For copies of the comments submitted refer to Appendix 9.

2.5 Assumptions

The following assumptions informed the socio-economic baseline study:

- The participants in the study responded truthfully in the interviews;
- The interviewees fully understood the questions being asked;
- The interviewers accurately captured the meaning of answers and the intentions of the interviewees; and
- The proposed Project will not change significantly in its design compared to what was presented during the interviews.

2.6 Limitations

The following limitations must be considered when interpreting the results of the baseline study:

- In a relatively short period of time it is impossible to gain an in-depth understanding of the local dynamics of the area including cultural and political contexts;
- The insights on the tensions between the community and the Tailings Operation remains superficial, and on-going community liaison is necessary to understand varying narratives;
- The socio-economic baseline study focused primarily on communities neighbouring the proposed Project Area, and no additional baseline data was gathered on private farmers in the areas;
- Although households were informed about the household survey, some households refused to participate in the survey, and this was attributed to JD not employing household members or assisting the communities with community development initiatives; and
- Poor relations between JD and the local municipality required social specialists building trust with the local municipality before commencing baseline fieldwork. This included not undertaking any key informant interviews prior to meeting with the Ward Councillor, and only after clearly explaining the purpose of the SEIA, were the social specialists able to proceed with the study. This delayed

consultation by one day, and as a result fewer key informants were interviewed than initially anticipated.

2.7 Impact Assessment Process

In conducting the SEIA, the following activities were completed:

- Stakeholder Identification and Analysis: Identification of all Interested and Affected Parties (I&APs) that will be directly and indirectly affected by the proposed project;
- Literature Review: A desk study of available literature and existing information relevant to the study;
- Socio-economic Baseline Studies: A description of the socio-economic environment of the Project Area. This study also covered the identification and assessment of prevalent perceptions and attitudes towards the Tailings Operation in general, and the proposed backfilling of the Jagersfontein Pit in particular;
- Socio-Economic Impact Identification: Identification of the potential social and economic impacts of the proposed backfilling of the Jagersfontein Pit (including impacts associated with the construction, operation, decommissioning and post closure phases of the project), focusing specifically on communities located in close proximity to project activities; and
- Social Mitigation Plan: Recommended mitigation measures to minimise/avoid the potential impacts associated with the proposed backfilling project.

2.7.1 Methodology

In the identification, rating and mitigation of impacts, the following impacts will be considered:

- Direct impacts – Caused by the action and occur at the same time and place;
- Indirect impacts – Caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable;
- Cumulative impacts – The impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.

SEIA investigations includes the following activities
Activity – Description of the activity that could potentially cause the impact;

- Risk/Impact – Description of the impact that the activity could have;
- Project phase – Impacts to be categorised according to project phases (construction; operation and decommissioning);
- Nature of risk or impact – Identification on whether the impact will be negative or positive; and
- Significance rating – Rating of impacts to be based on the following rating definitions.

2.7.2 Impact Significance Rating Definitions

Likelihood, duration, extent, magnitude, sensitivity and significant ratings should be based on the following scoring scheme:

Likelihood:

1 = Unlikely	2 = Possible	3 = Likely	4 = Definite Likelihood
Low to no probability of occurrence with the implementation of management measures	Possible that impact may occur from time to time	Distinct / realistic possibility that impacts will occur if not managed and monitored	Impacts will occur even with the implementation of management measures

Duration:

1 = Temporary	2 = Short Term	3 = Long Term	4 = Permanent
Possible to within a short period of time mitigate / immediate or fairly quick progress with management implementation <3 yrs	Impacts reversible within a short period of time +3 to 5 yrs	Impacts will only cease after the operational life +/- 50 yrs	Long term, beyond project closure or irreplaceable

Extent:

1 = Localised	2 = Site	3 = Area of Influence	4 = Regional/ Provincial/National
Localised to specific area of activities	Confined to the site	The extent of the impacts will affect the wider Area of Influence	Importance of the impact is of regional/provincial/ national importance

Magnitude (negative):

-1 = Low	-2 = Minor	-3 = Moderate	-4 = High
Negligible deterioration of baseline conditions.	Moderate deterioration, partial loss of habitat / biodiversity/ social functions or resources.	Reversible although substantial illness, injury, loss of habitat, loss of resources, and notable impacts on livelihood receptors.	Mainly irreversible. Causes a significant change in the environment. Substantial loss of livelihood.

Sensitivity:

1 = Low	2 = Moderate Low	3 = Moderate	4 = High
Areas already subjected to significant degradation. No vulnerable communities.	Partially degraded area. Small number of vulnerable communities present	Regionally designated sites / habitats. Some vulnerable communities present.	Nationally or internationally designated sites/habitats High number of vulnerable communities present. High dependency.

Magnitude (positive):

+1 = Low	+2 = Minor	+3 = Moderate	+4 = High
Slight enhancement of baseline conditions or functions.	Minor enhancement, of habitat / biodiversity/ social functions or resources.	Substantial improvement in human health, habitat, ecosystem services, and notable improvement on livelihood receptors.	Significant positive change in the environment viability, value and function. Development of livelihood.

Significance:

The significance of the impact is calculated as follows:

Significance = (Likelihood + duration + extent + sensitivity) x magnitude

		Likelihood + duration + extent + sensitivity			
		Low (+ / -) ≤4	Minor (+/ -) 5 – 8	Moderate (+ / -) 9 – 12	High (+ / -) 13 – 16
Magnitude	Low	Not significant	Not significant	Minor	Moderate
	Minor (2)	Not significant	Minor	Minor	Moderate
	Moderate (3)	Minor	Moderate	Moderate	High
	High (4)	Moderate	High	High	High

The matrix makes provision for the identification of potential interactions for all phases of the project (either positive or negative).

3. Project Description

3.1 Jagersfontein Developments ("JD")

Jagersfontein Developments (Pty) Ltd is recovering diamonds from eleven old Tailings Dumps purchased from De Beers in 2010. The Tailings Dumps were acquired from De Beers through a tender process that required JD meeting certain criteria set by De Beers, including technical competence, available funding to develop the new processing operation, BEE equity participation, employment creation and significant community based initiatives. These criteria are set out in the Sale of Assets Agreement, which makes provision for a contribution by JD of R60 million for the benefit of the Itumeleng Community Trust ("ICT").

3.1.1 Itumeleng Community Trust

The Itumeleng Community Trust was established in 2012, and although the Trust is a 10% equity holder in the Tailings Operation, the communities of Jagersfontein (including Fauresmith) are not the owners of the Community Trust. Instead the communities are identified as the beneficiaries of the Trust, and as such the communities do not own the assets and/or the money held by the Trust, but are entitled to benefit from the activities of the Trust.

The principal object of the Trust is set out in clause 7.1 of the Trust Deed:

"[T]he Trust shall be to benefit the Community by carrying one or more of the Public Benefit Activities or by facilitating Public Benefit Activities, in and for the benefit of the Community in accordance with the provisions of this Trust Deed, in a non-profit manner and for an altruistic or philanthropic purpose."

In order to achieve this main objective, the Trust Deed sets out provision for nine Trustees including five Independent Trustees, three Community Working Committee Trustees, and one De Beers Trustee.

It outlines that the Trustees shall in consultation with the Community Working Committee, identify projects that will constitute or facilitate Public Benefit Activities for the benefit of the community.

Public Benefit Activities supported by the Trust between June 2014 and December 2021 primarily focused on improving education and health in the communities of Jagersfontein. Some of these activities include:

- Scholarships for tertiary education and accommodation;
- Donations for textbooks, educational toys and playground equipment;
- Scholarships for courses in tracking, hospitality, au pair, security, and driving licenses;
- School uniform donations;
- Sports kits and refreshments for Sports Days including sponsoring a yearly athletic event for 60 adult and junior participants that includes sponsors running shoes, sports clothing and meat packs for prizes;
- Transport assistance for scholars and the elderly;
- Vision tests for the elderly; and
- Feeding schemes and annual food hampers distributed to indigent beneficiaries.

Total spend on training, enterprise and community development programmes since April 2012 to December 2021 amounts to R17,556,718.50.

3.1.2 Community Development

In addition to these activities, the ICT in 2019 established two community projects, namely the After Day Care Center, which provides additional learning support to Grade 1 and Grade 2 pupils, and the “Ask Archie” Computer Center, which assists Grade 8 to 12 learners with an e-learning solution for Mathematics and Science.

These programmes employ four local community members, and are located the Itumeleng Community Trust Offices in Jagersfontein.

The After Day Care Center provides after school learning support to 30 foundation phase learners in Grade 1 and Grade 2 who currently attend Boaramelo Combined School in Jagersfontein (refer to Photo 3-1). The children are provided with transport and food. The programme employs two educators, a teacher assistance, and is looking to appoint another educator in 2020 to provide additional learning support to graduated Grade 2 pupils who will be entering Grade 3 in 2020. Pupils selected to participate in the programme are identified by their teachers at Boaramelo Combined School, and in 2020 the programme will be expanded to include Saint Lawrence Primary School.


Photo 3-1: After Day Care Grade 1 and Grade 2 Pupils
(Captured November 2019)

The Ask Archie Computer Center provides Grade 8 to Grade 12 learners with the opportunity to practice Maths and Science using an e-learning solution called “Ask Archie”. The computer center has 10 computers, and is open on Saturday. This community programme employs one staff member, and assists High School students attending Boaramelo Combined School in Jagersfontein.

Apart from these ICT community projects, JD in 2016 constructed a water pipeline to the value of R1.1 million from the Wolvas Dam as contingency water resources for the communities of Jagersfontein. When requested by community authorities (including schools, municipality, hospital/clinics) JD assists with grading sports fields, and has also provided the Jagersfontein clinic with repairing electrical problems.

Other assistance to the Jagersfontein communities is by way of assisting the local municipality with extinguishing fires and clearing refuse. On an annual basis JD employees 200 community members to collect and recycle waste in the communities of Jagersfontein (Source: Jagersfontein Developments, 2021).

In addition to these activities JD also assists the municipality with repairing sewage pipes, and maintains the public sewage works. Recycled sewage water is used for its commercial requirements. Other support includes assisting the local municipality with diesel to fuel the water trucks supplying water to the communities, and providing the Diamant District Hospital with water.

Total spend on water, sewage and electricity since 2013 amounts to R140,055,218.70.

Community development is not guided by a Community Development Plan ("CDP"), and these activities are therefore not monitored or measured against a set of Key Performance Indicators ("KPIs").

3.1.3 Employment

The Tailings Operation currently employees 180 people of which 113 representing 63% of the entire labour force are local residents residing in the communities of Jagersfontein (refer to **Table 3-**1).

Table 3-1: Summary of the number of local employees employed at the Tailings Operation

Community	Total Number of Employees
Itumeleng	67
Jagersfontein Town	36
Charlesville	8
Fauresmith	2
Total	**113**

(Source: Jagersfontein Developments, 2022)

A total of 67 employees representing 37% of the entire labour force are not from Jagersfontein (refer to Table 3-2). A majority of these employees are from the North West Province, and voluntarily stay in hostel accommodation provided by JD.

Table 3-2: Summary of non-local employees

Community	Total Number of Employees
Makwassie	37
Wolmaranstad	15
Bloemhof	11
Kimberley	2
Christiana	1
Cullinan	1
Total	**67**

(Source: Jagersfontein Developments, 2021)

Local employees from the communities of Jagersfontein are employed on fixed-term contracts and fill various positions from General Workers, to Plant Operators, and Assistants. In addition, JD employees another 49 local employees as security personnel and service workers.

A total of 16 women representing 9% of the labour force are employed by JD. During a site visit to JD, it is evident that female staff are primarily employed as security and administration staff.

3.1.4 Skills development and training

The commitment by JD to employ locally required the Tailings Operation to initiate an Artisan Internship Programme that would train and generate employment opportunities for local community members. According to JD's Plant Manager, JD's Artisan Internship Programme has significantly contributed to local employment. "When the operation started in 2012 very few locals had skills [required by JD], and through the artisan training programme we have managed to employ many community members" (Key informant interview, 2019).

Currently JD sponsors five local students who are undergoing artisan training in diesel mechanics and welding at De Beers. Since 2012 JD has spent a total of R3,562,948.30 on training local community members.

In addition, JD established an Artisan Training Center at the ICT Building in 2016 that ran for a period of two years ending in 2017. A total of 80 students (40 per year at an annual cost of R2,6 million) underwent training for 12 months in the following qualifications:

- NQF Level 4 Building and Civil Construction: Plumbing
- NQF Level 3 Building and Civil Construction: Painting
- NQF Level 3 Building and Civil Construction: Carpentry
- NQF Level 3 Building and Civil Construction: Bricklaying and Plastering

3.1.5 Local procurement

The objective of promoting local procurement is to allow businesses in the area to economically benefit from the presence of an operation.

Since 2012 a total of 33 businesses in Jagersfontein, Itumeleng, and Fauresmith have supplied JD with services and equipment to the value of R18,158,462.

Some locally procured services include catering, transportation, and tyre repair services.

Of these local businesses some are owned by Black South Africans, which are classified as Historically Disadvantaged businesses.

In addition, other regional business have also supplied JD with services and goods to the value of R11,901,721 since 2012.

Total local procurement since 2012 is valued at R30,060,183.

3.1.6 Processing methods

Methods undertaken at the Tailings Operation include ploughing and/or ripping of the Tailings Dumps to loosen tailings before they are loaded onto conveyors and/or trucks, which transport the material to the Dense Media Separation (“DMS”) Plant where a sink-float process is used to separate the minerals. For the separation process a suspension of dense powder in water is used to form a heavier liquid. The heavier material containing the diamonds sinks and the lighter material floats.

In 2019 a pan plant was also introduced to increase to further separate material into concentrate (which carries the diamonds) and excess material (used for the stabilisation of the FTSF walls). The concentrate still passes through the x-ray machine and sorting house used at the DMS Plant.

From the Plant the material is separated into coarse and fine tailings, which are transported to the existing FTSF located on the Remainder of the Farm Jagersfontein 14 IS. The coarse tailings are used for the stabilisation of the walls of the FSTF, and the fine tailings are stored inside the FSTF.

The current FSTF is near capacity, and based on the existing design of the plant and facility, JD requires a new FTSF. JD has identified an opportunity to rehabilitate and stabilize the Jagersfontein Pit through a

backfilling process that aims to restore the Pits stability, eliminate associated safety risks, and provide JD with a new Fine Tailings Storage Facility ("FTSF").

3.2 Jagersfontein Pit

The Jagersfontein Pit is located on Portion 15, which is 140m southwest of the Jagersfontein Town (refer to Figure 3-1). The Farm Jagersfontein is located in the Xhariep District Municipality of the Free State Province, and falls within Ward 6 of the Kopanong Local Municipality (refer to Figure 3-4). Portion 15 is 53,4552ha in extent and is owned by JD. It is bordered by Portion 16, and the remainder of the Farm Jagersfontein, which is owned by JD and the Kopanong Local Municipality. Activities associated with the Tailings Operation mainly occur on the remainder of the Farm Jagersfontein with other activities associated with the Tailings Operation occurring on Portion 16. The small Free State towns of Jagersfontein, Charlesville and Itumeleng are also situated on the Farm Jagersfontein 14/RE.

The Pit has a surface area of 19.635ha, and when measured from the Pit's surface, it has a visual depth of 236m to the exposed bottom layer ("EBL"). There are voids underneath the EBL, which have a thickness of 100m, and taking into account the Pit's shafts and other invisible voids below the EBL, the Pits depth is approximately 800m (Figure 3-1).

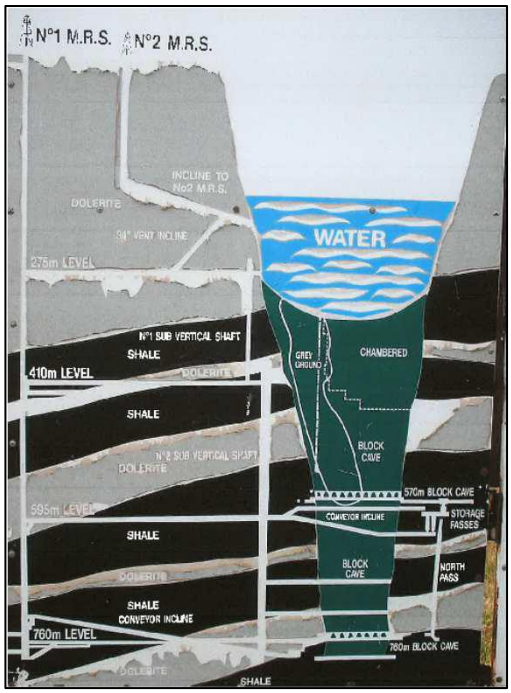

Figure 3-1: Coloured cross-section of open pit
(Source: SRK, Jagersfontein Pit Report, 2012)

3.2.1 Jagersfontein Pit heritage value

The historical origins of the Pit date back to 1870 when a farmer by the name of De Klerk found the first diamond in Jagersfontein. It is considered the world's biggest and oldest vertical handmade diamond mine of its kind, and was excavated by miners using pick, shovel and dynamite (www.placed.co.za).

Of the ten biggest diamonds ever found in the world, two were found at the Jagersfontein mine. This includes the Excelsior diamond weighing 971 carats, which was found in 1893, and the Jubilee diamond weighing 650.8 carats, which was found two years later in 1895 (https://en.wikipedia.org/wiki/Excelsior_Diamond).

The Pit was mined by various mining parties over a period of 40 years, and in 1913 underground mining by means of a vertical shaft and horizontal tunnels (drifts) started (www.placed.co.za). It was only in 1931 when De Beers Consolidated Mines Ltd., under the chairmanship of Sir Ernest Oppenheimer, became the official new manager of the Jagersfontein mine and town (Philip, 2016). The mine remained in production until 28 May 1971, when operations by De Beers finally ceased (Philip, 2016). During the 100 year life span of the mine, it is estimated that a total of 9.625 million carats of jewel quality diamonds were mined in Jagersfontein (www.placed.co.za).

Given the rich history of this Pit there is no doubt that the Pit is a heritage asset, which is culturally and historically significant. It is also located in Jagersfontein Town, which is also a heritage site.

The town was the first town in the Free State to be electrified and to receive a piped water supply. This small but bustling mining town also once afforded its inhabitants hotels, bars, shops and businesses of all kinds, including a thriving social life unparalleled to any of the other towns in the Free State (www.placed.co.za).

Unlike its lustrous history, Jagersfontein is now a dilapidated Free State town that suffers from high-unemployment, severe water shortages, and a crippling municipality. Many of the old heritage buildings are in a state of disrepair, and in 2009 riots (as a result of poor municipal service delivery) resulted in a number of the heritage buildings being destroyed.

To develop the tourism potential of this town would require huge capital investment by the Government through public-private partnerships. The area is scarred from centuries of mining that have resulted in large areas of land been marred by tailings.

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.

De Beers established the museum in the early 1970s, and also maintained the museum prior to JD taking it over in 2011 when it was closed to the public for safety reasons due to its close proximity to a section of the Pit that is back breaking. This was after the museum was looted of historical assets detailing some of the rich history of the Jagersfontein mine. JD is currently maintaining the museum building, which is also being used for sleeping quarters by JD's staff.

A Heritage Impact Assessment was undertaken that will further investigate the historical value of the Pit, which like Jagersfontein Town, is also in a state of degradation.

3.2.2 Jagersfontein Pit Access and Safety Risks

As it currently stands the Pit is unstable, unsafe and closed for public viewing. Two viewing platforms have previously fallen into the Pit, and based on the recommendations by Rodney van Dam, a senior engineer at MRH Consulting, the present viewing platform (Photo 3-2) was closed to the public in April 2011, and JD fenced Portion 15 of the Farm Jagersfontein 15IS to prevent public access to the Pit.

The study determined that the Pit is breaking back at 1m per year, and within time, the increased rim of the Pit will affect property and structures within a 100m zone of influence. As such, residents housed in the 100m zone of influence would need to be relocated if the Pit is not stabilized through backfilling (SRK, April, 2012).

In addition it was recommended by Dr. Graham Howell and Mr. Adriaan Meintjies that regular monitoring would also be necessary to ensure that risk reduction measures including fencing are maintained to prevent loss of life and injuries (SRK, April 2012).

In 2012 a geo-technical report compiled by Dr. Graham Howell and Mr. Adriaan Meintjies, Principal Engineers at SRK Consulting, reported that the Pit is unstable.

In this report (SRK, April 2012) it is detailed that the Pit's walls, especially on the northern and north-eastern sides, are susceptible to open jointing and toppling failures. The north west/south east trending fault that traverses the Pit is also susceptible to erosion, in the form of deep gullies in the north-west, and block failure. Residents neighbouring the Pit reported vibrations and break backing of the Pits steep slopes since De Beers ceased mining in 1971.

Photo 3-2: Gantry closed to public for viewing
(Captured November 2019)

3.2.3 Jagersfontein Pit Backfilling

Dr. Graham Howell and Mr. Adriaan Meintjies considered a number of potential civil engineering methods to stabilise the Pit. In their detailed assessment it was concluded that backfilling the Pit with coarse and fine tailings from JD's Plant is the only viable and economically feasible way to ensure the Pit's stability and eliminate any potential risks to surrounding residents in the long term.

Other methods considered to stabilise the Pit included using rock anchors. These anchors would need to be approximately 150m in length, spaced 10m by 10m along the Pit's rim, and would extend for some 320m totalling 320 anchors. At an estimate budget of half a billion rand, this method is deemed unfeasible and uneconomical (SRK, April 2012).

Given that other engineering interventions to stablise the Jagersfontein Pit are "far outside the realms of possibility" (SRK, April, 2012), the proposal to stablise the Pit by filing it with coarse and fine tailings is the only feasible engineering option. The backfill material will buttress the unstable Pit slopes and mitigate further break back towards Jagersfontein Town. This process would entail backfilling the Pit from the rim of the Pit since access to the Pit, either from surface or from underground, is not possible.

Course tailings from the Plant would be transported via conveyor to the southern rim of the Pit, while the slimes or fine tailings would be piped from the Plant to a discharge point on the eastern side of the pit (SRK, April, 2012). To ensure better stability of the Pit, coarse tailings will be used to “line” the Pit's base and form a base layer or “filter blanket” on the southern side of the Pit. This “filter blanket” will have an initial thickness of 10m, which will increase as deposition continues. The fine tailings will only be introduced to the Pit's eastern flank in the fourth month after commencement of the coarse tailings’ deposition. Due to the density of the fine tailings being lower than that of the coarse tailings, these will remain above the coarse tailings.

This proposed method of infilling the Pit will entail changing the tailings discharge point. This will require discharging the backfilling material from various points around the Pit.

Given the total volume of tailings still to be processed is approximately 36 Million tons (“Mt”), of which 25.6 Million cubic metres (“Mm3”) will be backfilled into the Pit, the backfill material will fill the Pit to a level some 60m below the rim. Since the backfill material will only reach to a level of 60m below the rim, which is below the upper aquifer depth, no effect on the regional usable aquifer will result. As part of the Water Use Licence application, an Integrated Water and Waste Management Plan (2019) prepared by Turn 180 Environmental Consultants will inform ongoing monitoring of all water resources including investigating, developing and implementing management measures to reduce any environmental impacts.

It will take approximately eight years at the current production rates to deposit the backfill material into the Pit, and if backfilling commences in 2020 it is likely to end in 2028.

When infill ceases in 2028 the depth of the Pit will be 60m, although the Pit's unique outer rim and geology will still be observed.

The conveyors, pipes and related infrastructure required to transport the coarse and fine tailings to the Pit would need to be constructed. It is estimated that the construction period (including civils) will be approximately three months, and that the manufacturing of the conveyor structures would require JD employing 15 people from the area. The civil construction will be outsourced to a contractor.

More detail on the project description is provided in the Jagersfontein Pit Backfill Design Report prepared by SRK Consulting (2019).

3.3 Project Alternatives

The rationale to infill the Pit stems from JD requiring a new tailings facility similar in size to the existing tailings facility. Currently the Tailings Operation utilises the existing Fine Tailings Storage Facility (FTSF) for storage of the fine tailings from the Plant. Coarse tailings are returned to the existing footprints from where they were removed and are used to stabilise the walls of the FTSF.

The existing FTSF's footprint is approximately 110 ha. The continued storage of the tailings in an aboveground facility would require an additional FTSF to be constructed at a different location to the existing one. The Integrated Water and Waste Management Plan (2019) identified the following impacts of constructing a new tailings facility:

- Loss of land: An additional 100 Ha of surface area to a height of some 33m will be further sterilised;
- Pollution of ground water: The new facility could potentially act as a pollution source for the upper aquifer (up to 20m below surface), from which water is currently abstracted in the area.

The costs associated with constructing a FTSF are regarded as not economically feasible (IWWMP, 2019).

3.4 Project Area

The Project Area is defined as a geographical area within which social and environmental studies are completed in order to determine direct, indirect and cumulative impacts attributable to the project. Typically the Project Area and the study area overlap and are; unique to a project; larger than the actual footprint of a project; and encompasses socio-economic issues and impacts, as well as issues and impacts associated with other disciplines (e.g. environment, health and safety).

Defining the study area is used to determine a project's area of influence and responsibilities. It also provides guidance on the area to be monitored, and managed, and assists with defining stakeholders, and the tools needed to gather data for identifying project impacts.

For this study three interdependent target populations were included in the Project Area:

- Site-specific target population;
- Local target population; and
- Regional target population.

3.4.1 Site-specific target population

The site-specific target population: The area likely to experience impacts related to the development of the project infrastructure and activities. In the context of this project, this study area is defined as the settlements directly impacted by the proposed Project. In terms of the direct area of influence, the property on which the backfilling of the Pit will take place belongs to JD (refer to Figure 3-2).

MAP OF SITE SPECIFIC TARGET POPULATION

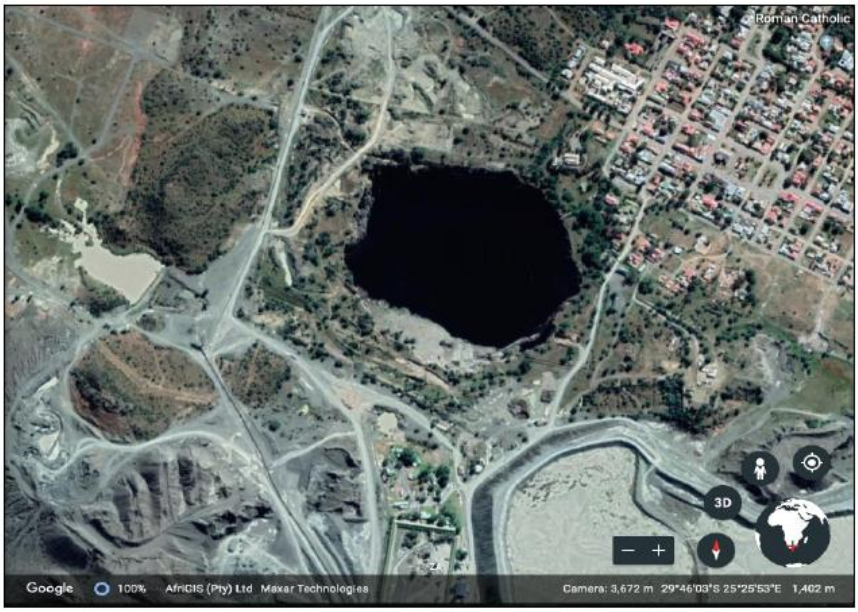

Figure 3-2: Site specific target population
(Source: Google Earth)

The site consists of the Pit, a degraded gantry, and an old mining museum located roughly 50m from the Pit. A few Jagersfontein residents live 80m to 100m north east of the Pit. Other buildings in close proximity to the Pit include the Blue Diamond Lodge, the office of the Itumeleng Trust, the After Day Care Center, and the Thusa Sechaba Creché, which are located within 100m north east of the Pit.

The conveyors, pipes and related infrastructure required to transport the coarse and fine tailings to the Pit will need to be constructed. To ensure better stability of the Pit, the pipe and the conveyor will move around the Pit and the Backfilling Material will be discharged from various points around the Pit. The construction of this infrastructure is not expected to directly impact Jagersfontein residents residing within 80m to 100m north east of the rim of the Pit.

3.4.2 Local target population

The local target population: Comprise the people residing within close proximity to the proposed Project; these are in Wards 6 of the Kopanong Local Municipality (KLM), and include the following small towns of Jagersfontein, Itumeleng, Charlesville (refer to Figure 3-3). Due to Ward 6 of the KLM bordering Ward 7, the project will also have an influence in this Ward, and namely the town of Fauresmith.

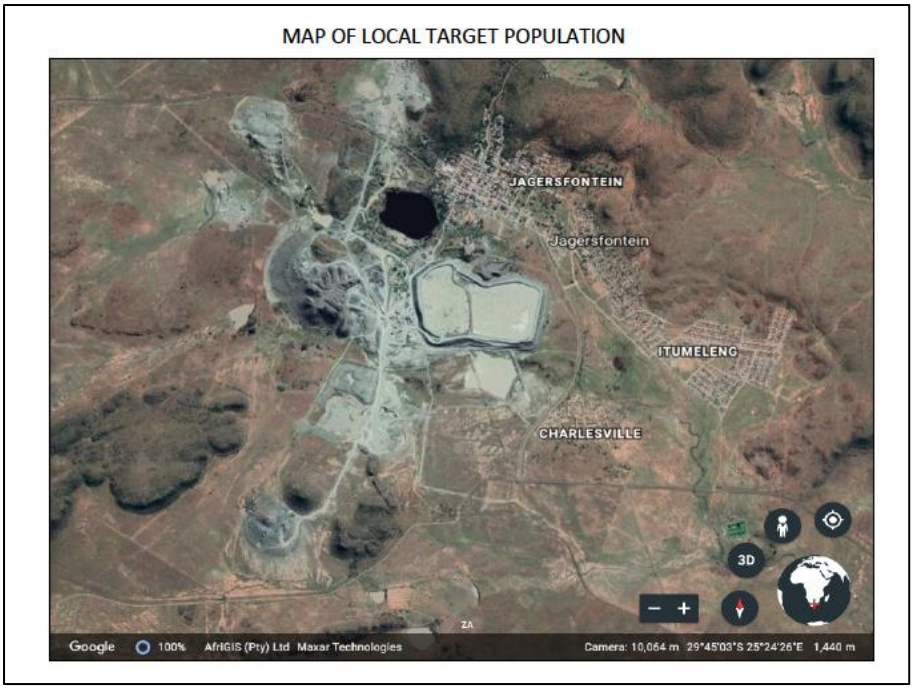

Figure 3-3: Local target population
(Source: Google Earth)

3.4.3 Regional target population

The regional target population: This is the area likely to experience indirect or induced impacts of the Project. This encompasses the broader populations of the Local Municipality falling within the Xhariep District Municipality of the Free State (refer to Figure 3-4).

The baseline study primarily focuses on detailing the site-specific and local target populations of Jagersfontein Town, Itumeleng, and Charlesville, and provides a high-level summary on Fauresmith, and the regional target population of the Kopanong Local Municipality falling within the Xhariep District Municipality of the Free State.

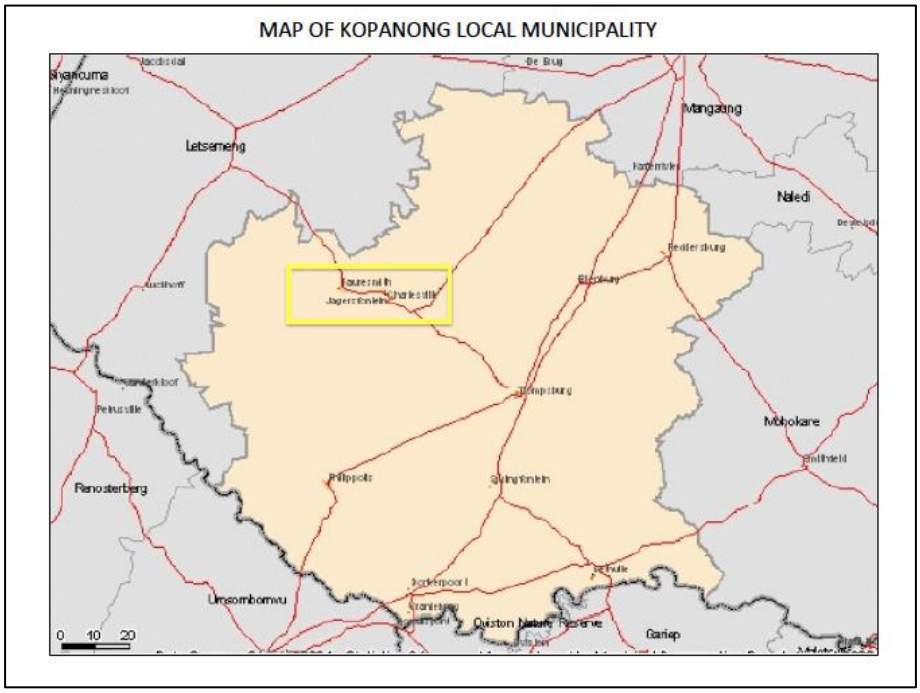

Figure 3-4: Regional target population
(Source: Kopanong Local Municipality, Integrated Development Plan 2014-2015)

4. Socio-Economic Context

4.1 Introduction

This section presents a summary of the socio-economic information gathered largely from secondary resources including the Xhariep District Municipality Integrated Development Plan (2017/2018), and the Kopanong Local Municipality Integrated Development Plan (2017/2018).

It presents a summary of the primary socio-economic data gathered during key informant interviews and a household survey.

A general understanding of the local socio-economic environment will assist with:

- Establishing the demographic and related socio-economic information on health, education, livelihood activities and income sources. Focusing specifically on communities located in close proximity to project activities;
- Identifying the potential social and economic impacts of the proposed backfilling of the Jagersfontein Pit on the Jagersfontein communities; and
- Determining mitigation measures to minimise and avoid the negative potential impacts, while enhancing the positive impacts associated with the proposed backfilling project.

4.2 Regional Socio-economic Context

4.2.1 Free State Province

The Project Area is located in the Free State Province of South Africa, which is bordered by the Northern Cape, Eastern Cape, North West, Mpumalanga, KwaZulu-Natal and Gauteng provinces, as well as Lesotho. The Free State is a rural province comprising farmlands, mountains, goldfields and widely dispersed rural towns and settlements.

Although the Free State is the third largest province covering an area of 129 825km², it has the second smallest population of 2 834 714 inhabitants representing only 5.1% of the national population.

Its capital is Bloemfontein, which is also South Africa's judicial capital. Other important towns include Welkom, Kroonstad, Sasolburg and Bethlehem.

The economy is dominated by agriculture, mining and manufacturing. Known as the 'bread basket' of South Africa, about 90% of the Province is under cultivation for crop production. It produces approximately 34% of the total maize production of South Africa, 37% of wheat, 53% of sorghum, 33% of potatoes, 18% of red meat, 30% of groundnuts and 15% of wool.

It is the world's fifth-largest gold producer, and is also home to the giant synthetic-fuels company, Sasol.

The Free State is divided into one metropolitan municipality (the Mangaung Metropolitan Municipality), four district municipalities, and 18 local municipalities. (www.municipalities.co.za)

4.2.2 Xhariep District Municipality

The Project Area is located within the Xhariep District Municipality of the Free State Province (refer to Figure 4-1).

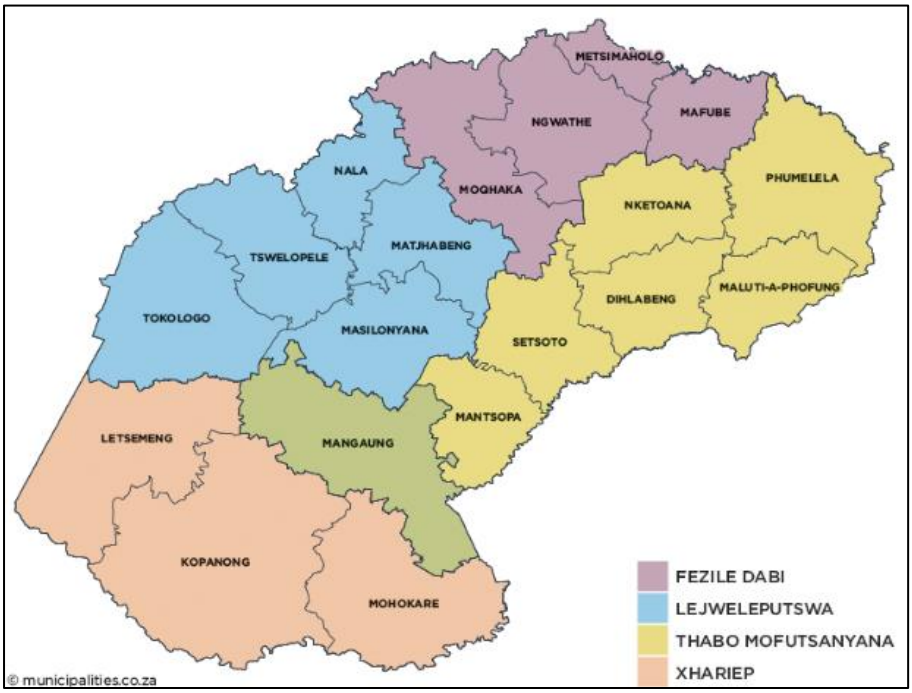

Figure 4-1: Free State District and Local Municipalities
(Source: https:/muncipalities.co.za/provinces/view/2/free-state)

The Xhariep District Municipality has a dispersed population of 125 884 inhabitants (Statistics SA, 2016). It is a typically rural district comprising three remote towns and 20 smaller towns that provide the role of service centers for the local populations within their catchment area.

The Xhariep District Municipality is the smallest district within the Free State and is made up of three local municipalities namely, the Letsemeng, Kopanong and Mohokare local municipalities.
Jacobsdal, Koffiefontein, Gariepdam, Trompsburg and Zastron constitute the main economic centers within the District, and Jagersfontein and Fauresmith are identified as two of the 12 urban centers that serve the surrounding rural areas.

The population in the District is described as youthful, with children under the age of 15 making up 30.76% of the population and those aged between 15 and 39 accounting for a further 40.48%.

The education statistics for the District Municipality show that 4.9% of the population have a post school qualification, 31.9% have some high school education, while 71.4% have less than a high school education.
According to the 2011 Census Data, 87.59% of the 43,366 households in the District live in formal dwellings, 12% of household live in informal dwellings, and 0.41% live in traditional dwellings.

A total of 81.44% of households in the District have access to piped municipal water, while 18.56% of the population do not have access to piped water. The remaining 3.78% of households in the District source water from water tanks and boreholes.

With regards to sanitation, most households have access to flushing toilets (81%). A total of 7% use pit latrines, while 6% have no toilet facilities, and the remaining 6% use other toilet facilities.

According to Statistics South Africa (2012) 92.59% of the households in the District have access to electricity, while only 7.41% of households do not use electricity for cooking or lighting.
Land use is primarily agricultural, and approximately 75% of the District land is used for livestock farming, especially sheep and cattle for wool and meat, respectively.

The employment statistics for the District Municipality show that 36% of the working population are employed. Of those unemployed, 13% are classified as unemployed, while 43% are not economically active, and 8% are discouraged work-seekers (refer to Figure 4-2).

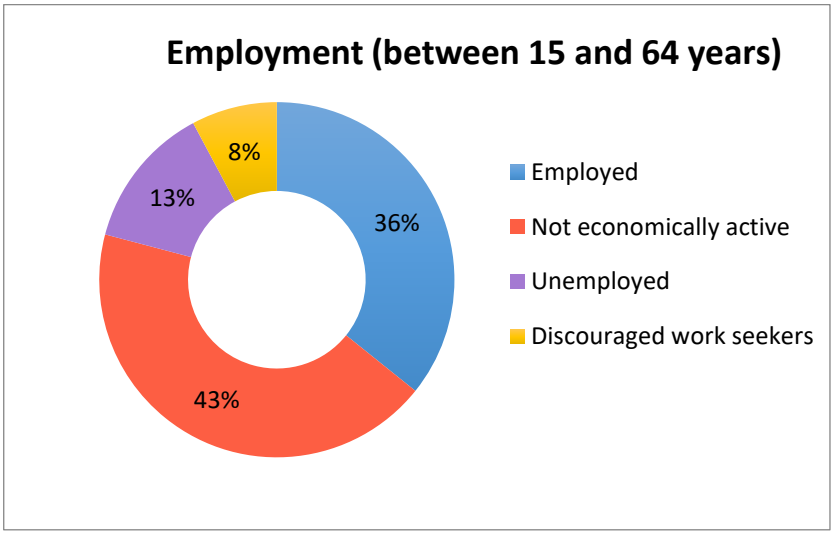

Figure 4-2: Employment statistics for the Xhariep District Municipality
(Source: Xhariep District Municipality IDP, 2017/18)

In the District 46.03% of households live below the poverty line, and rely predominately on social grants. (Xhariep District Municipality IDP, 2017/18).

4.2.3 Kopanong Local Municipality

The Project Area is located within the local district municipality of Kopanong in the Free State (refer to Figure 4-3).

Kopanong Local Municipality is the largest local municipality of the four local municipalities in the Xhariep District. It covers a total land area of 15,645 km^2, and comprises eight wards, and nine towns, including Gariep Dam, Springfontein, Bethulie, Jagersfontein, Phillippolis, Fauresmith and Reddersburg, of which, Trompsburg is the main economic center.

The Local Municipality is governed by a Council comprising sixteen council members. Eight council members are allocated to Ward Councillors elected by the Wards they represent, and the remaining seven seats are awarded to political parties in proportion to the number of votes received.

The total population of the Local Municipality is 49 999 inhabitants comprising 24 812 males and 25 188 females. Children under the age of 19 make up 38.63% of the population and those aged between 20 and 39 account for 31.21% of the population, which is lower than the District Municipality where those aged between 20 and 39 make up 40.48% of the population (Kopanong Local Municipality IDP, 2017/22).

Some 37.9% of the population speak Sotho in the Kopanong Local Municipality. This is closely followed Afrikaans, which is spoken by 34.8% of the population and 20.6% speak Xhosa. Other languages spoken include Tswana and English.

The racial composition of the population comprises 71.5% Black Africans, 18.2% Coloured, 9.4% White and Indian 0.4%.

The education statistics for the Local Municipality 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 Local Municipality have received some high school education, and a majority (representing 70% of the population) have less than a high school education (refer to Figure 4-).

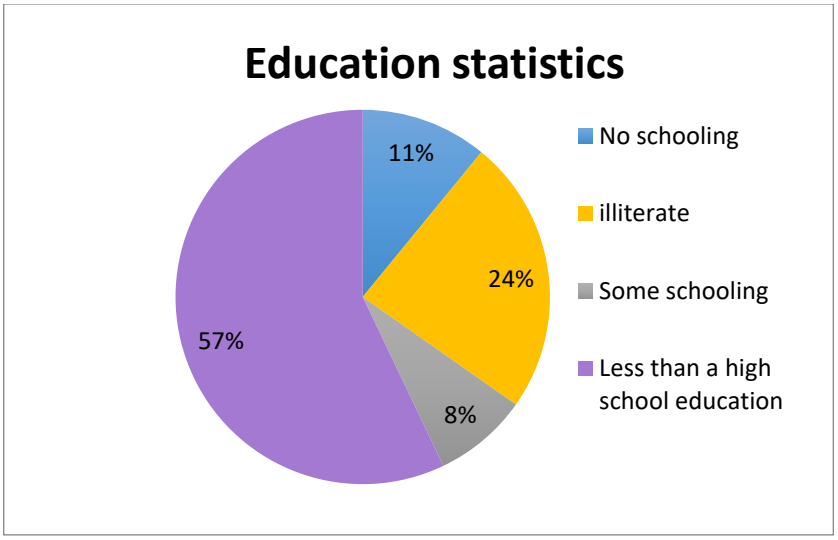

Figure 4-3: Education statistics for the Kopanong Local Municipality
(Source: Kopanong Local Municipality IDP, 2017/2018)

According to the Kopanong Local Municipality IDP (2017/22) a total of 99% of households have access to piped municipal water, and 99.9% of households have access to flushing toilets, which is higher than the number of households in the District Municipality with access to piped water (81.44%) and flushing toilets (81%).

Across the municipality 92.6% of households make use of electricity as a form of lighting, 0.1% use gas, 0.7% paraffin, 5.8% candles, 0.6% solar and 0.2% do not have access. The use of other forms of lighting except electricity is predominant in informal dwellings and " RDP" houses build without electricity supply.

The HIV/AIDS prevalence in the Local Municipality is 2.9%.

The economy in the Kopanong Local Municipality is dominated by agriculture, which according to the Kopanong Local Municipality IDP (2014/15) employs almost a third of the working population, and accounts for 38% of the Gross Geographic Product (GGP), followed by general government services (23%), finance (13.3%), and trade (10.2%).

According to the Kopanong Local Municipality IDP (2017/22) there is tourism potential in the towns of Gariep Dam, Bethulie, and Philippolis, Jagersfontein and Fauresmith, which would create the potential for job opportunities in the tourism sector.

The employment statistics for the Local Municipality show that 36% of the working population (between the ages of 15 and 64) are employed, 13% are unemployed, 7% are discouraged work seekers, and 44% are economically not active (refer to Figure 4-4), which are very similar to the employment statistics for the District.

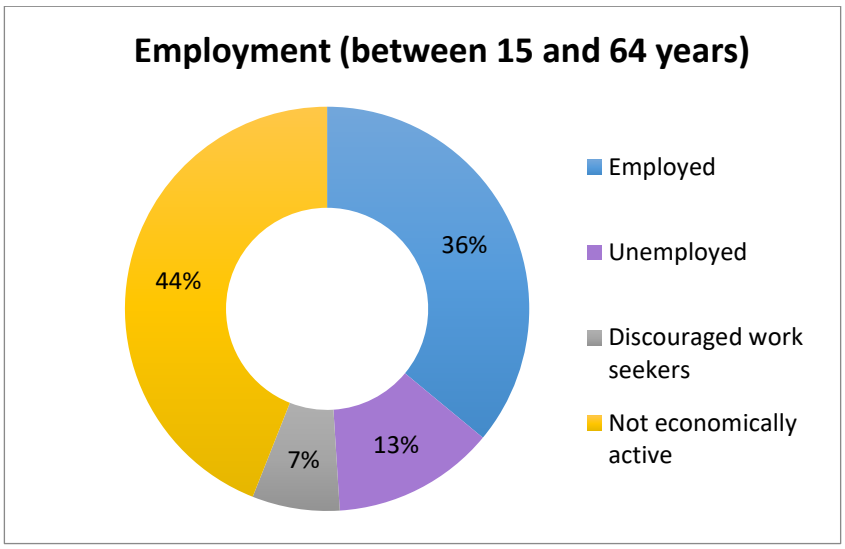

Figure 4-4: Employment statistics for the Kopanong Local Municipality
(Source: Kopanong Local Municipality IDP, 2017/2022)

According to the Kopanong Local Municipality IDP (2014/15) the rate for people living in poverty in Kopanong is approximately 40.2%. Support provided to poverty stricken communities includes administration of social grants and job creation through the Extended Public Works Programme, which in 2017 and 2018 created more than 250 jobs.

The Kopanong Local Municipality IDP (2017/22) identifies the following service delivery priorities:

- Basic service delivery;
- Financial viability;
- Good governance;
- Local economic development; and
- Public participation.

In addition, the Kopanong Local Municipality IDP (2017/22) identifies the following development challenges facing the municipality:

- Water losses;
- Non-payment of services;
- Sewage spillages;
- Potholes;
- Incomplete housing projects;
- Refuse removal
- Land invasions;
- Irregular expenditure; and
- Ageing infrastructure.

5. Local Socio-Economic Baseline Description

5.1 Introduction

The Project Area is located in close proximity to the Jagersfontein communities comprising Jagersfontein Town, Itumeleng, and Charlesville. As a result, the baseline study primarily focuses on detailing the site-specific and local target populations of Jagersfontein Town, Itumeleng, and Charlesville, which were included in the household survey, and provides a high-level summary on Fauresmith.

5.2 Population

Accurate population figures are not available for communities in the Project Area; however estimates were collected in consultation with community representatives and verified by community members in key informant interviews.

Table 5-3 provides an overview of the estimated population figures for communities in the Project Area.

Table 5-3: Estimated population of communities in the Project Area

Community	Estimate Households	Estimate Population	Number of surveyed households
Fauresmith	1 264	5 056	0
Itumeleng	1 186	5 930	40
Jagersfontein Town	371	1 484	20
Charlesville	178	712	9
Total	**3 147**	**13 182**	**69**

(Source: Key Informant Interviews, 2019)

Estimate figures from Key Informant Interviews show that there are approximately 13 182 people residing in the Project Area with an average of 4.2 persons per household, which is higher than the Local Municipality average of 2.7 persons per household.

In the household survey the number of household members per house ranged from 1 to 12 household members, and it was identified that a majority of households in Jagersfontein, Itumeleng and Charlesville comprise extended family members including a husband, his wife, their children, grandchildren, grandparents and son/daughter in-laws. Very few households interviewed had tenants, and of the 69 households interviewed only 8 renters were identified.

5.3 Age and Gender

Given that certain age groups and genders are more susceptible to potential project related impacts, it is important to understand the age and gender dynamics characterising a Project Area.

Amongst the surveyed households, 29% of the population are under the age of 19, which is lower than the Local Municipality where 38.63% of the population is below the age of 19. Of the households surveyed, 33% of the household members are between the ages of 20 and 39, while very few household members are between 66 and 75 years (refer to Figure 5-1). This is similar to the Local Municipality where those aged between 20 and 39 account for 31.21% of the population, which is lower than the District Municipality where those aged between 20 and 39 make up 40.48% of the population

These results demonstrate that the majority (71%) of the people residing in the Project Area fall within the economically active population defined as the number of people that are able and willing to work from the age of 15 up to and including 64 years.

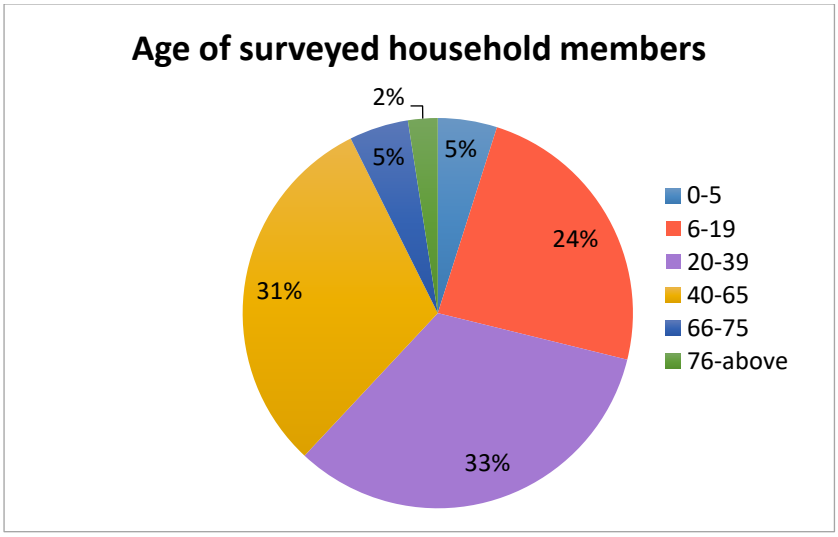

Figure 5-1: Age of surveyed household members
(Source: Household survey, 2019)

Unlike the District and Local Municipalities, the surveyed households in the communities of Jagersfontein comprise more males than females, and approximately 54% of the surveyed population are male while women constitute approximately 46% of the surveyed population (Figure 5-2). This is possibly due to more male job seekers moving to the area in search of employment opportunities.

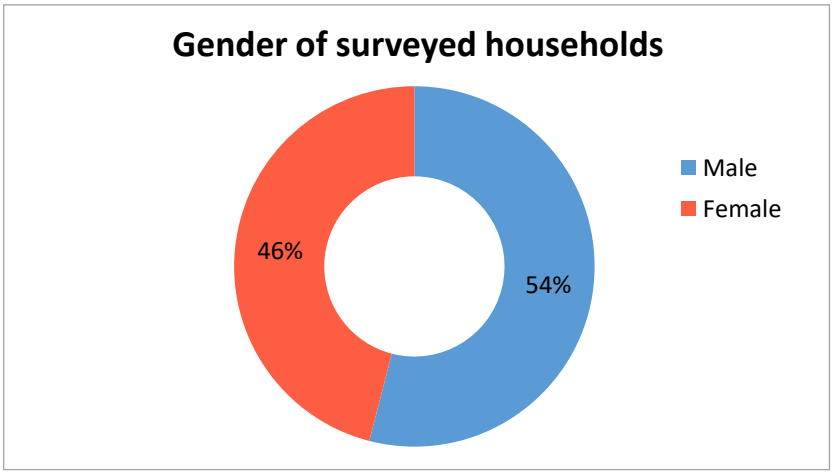

Figure 5-2: Gender of surveyed household members
(Source: Household survey, 2019)

5.4 Settlement

In the household survey, households were asked to provide a reason for settling in the community. Of the households interviewed, 43% inherited land, while 24% of the households settled in the area due to the availability of land and housing (refer to Figure 5-3).

Surprising only 10% of the households surveyed indicated that they moved to the area for employment opportunities, and only 9% of the households indicated that they moved to the area in search of employment opportunities with JD.

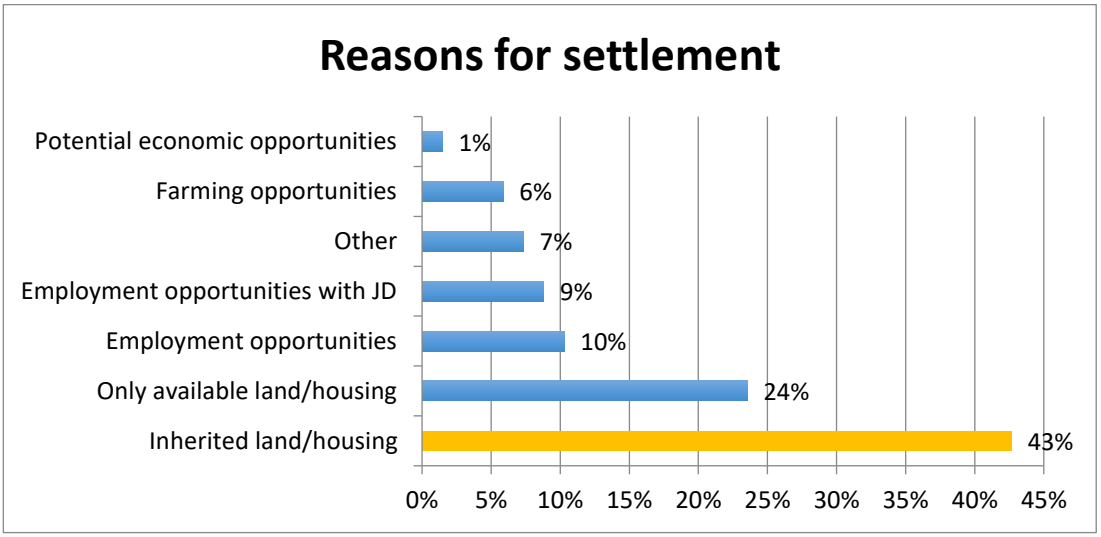

Figure 5-3: Reasons provided by surveyed households for settling in the communities
(Source: Household survey, 2019)

Majority of the households surveyed (62%) have resided in the communities of Jagersfontein for more than 20 years, and only 10% moved to the area between 6 and 10 years ago when JD started operating in the area (refer to Figure 5-4).

As such very few (9%) households surveyed migrated to the area in search of employment opportunities with JD, and most households living in the area inherited land in the community.

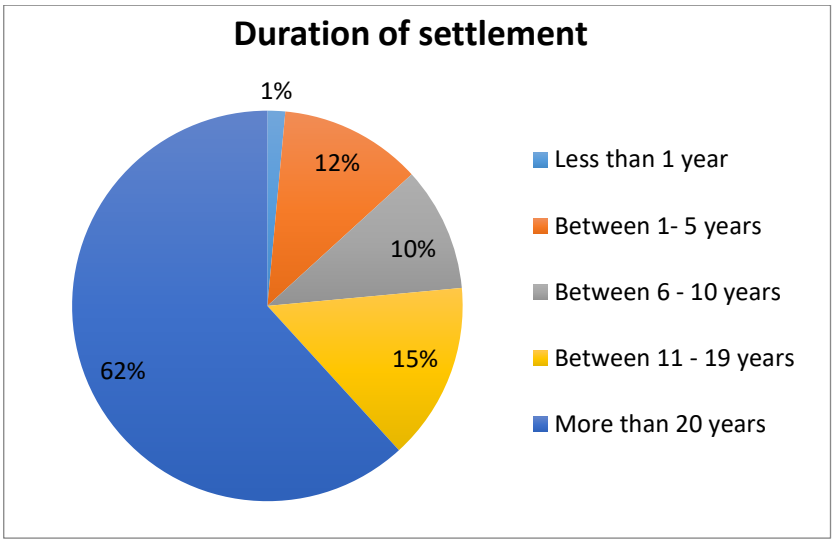

Figure 5-4: Length of period of surveyed households in area
(Source: Household survey, 2019)

Data for each of the communities closely resembles the overall survey data, except in Jagersfontien where more households settled as a result of employment opportunities with JD than other communities in the Project Area (refer to Table 5-2).

Table 5-2: Reasons for settling in area as per each community surveyed

Reasons	Jagersfontein	Itumeleng	Charlesville
Inherited land/housing	47%	44%	30%
Only available land/housing	16%	26%	30%
Employment opportunities	11%	10%	10%
Employment opportunities with JD	16%	8%	0%
Other	11%	5%	10%
Farming opportunities	0%	5%	20%
Potential economic opportunities	0%	3%	0%

(Source: Key Informant Interviews, 2019)

5.5 Ethnicity and Religion

Within the Project Area Sotho (63%) is the dominant ethnicity, followed by Xhosa (18%), Tswana (12%), and and Afrikaans (7%).

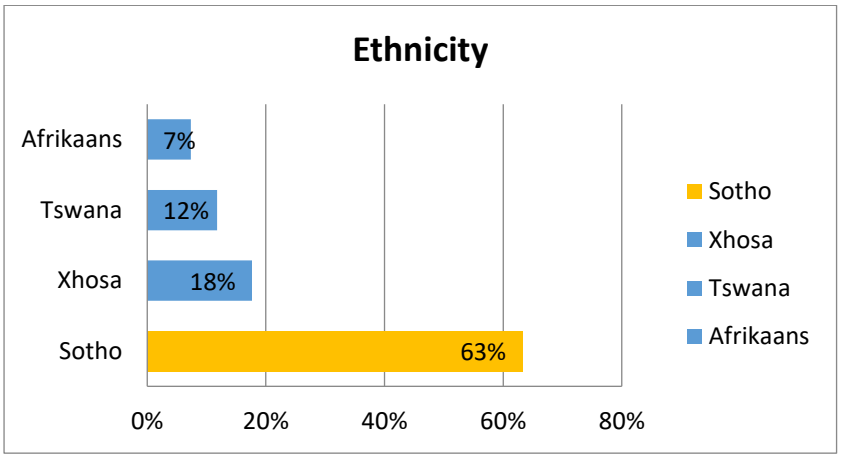

Figure 5-5: Ethnicity of surveyed household members
(Source: Household survey, 2019)

In Itumeleng no households reported speaking Afrikaans, and the dominant ethnicity is Sotho, followed by Xhosa and Tswana.

Unlike Jagersfontein and Itumeleng, Xhosa is the dominant ethnic group in Charlesville (40%), and only 20% of the surveyed households reported speaking Sotho, Tswana and Afrikaans (refer to Table 5-3).

Table 5-3: Language spoken by communities in the Project Area

Language	Jagersfontein	Itumeleng	Charlesville
Sotho	61%	73%	20%
Xhosa	22%	13%	40%
Tswana	0%	15%	20%
Afrikaans	17%	0%	20%

(Source: Key Informant Interviews, 2019)

In the household survey it was identified that some 47% of the households practice Christianity, 29% Catholic, and 13% practice various forms of traditional religions. Refer to Figure 5-6.

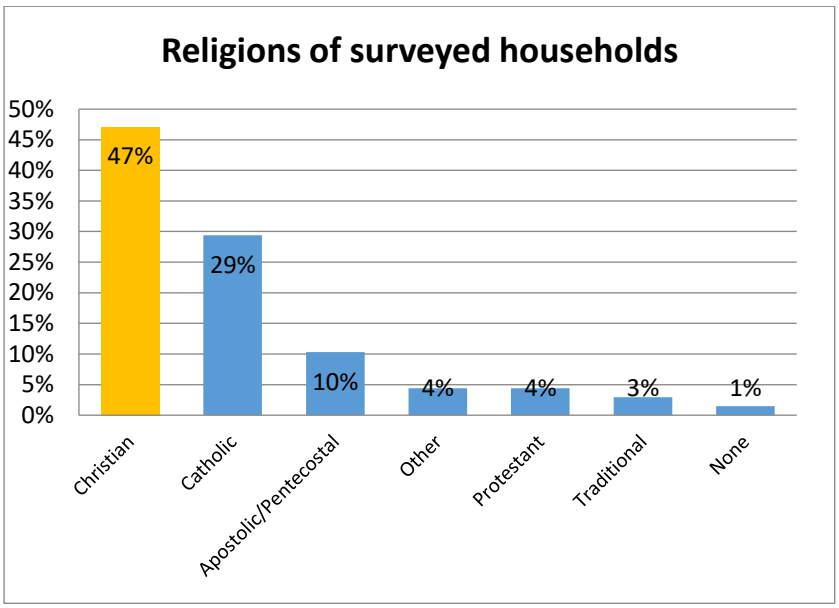

Figure 5-6: Religions of surveyed household members
(Source: Household survey, 2019)

In the communities of Jagersfontein many church buildings were identified including six churches in Jagersfontein Town (refer to Figure 5-7), at least seven in Itumeleng and one General Apostolic Church in Charlesville.

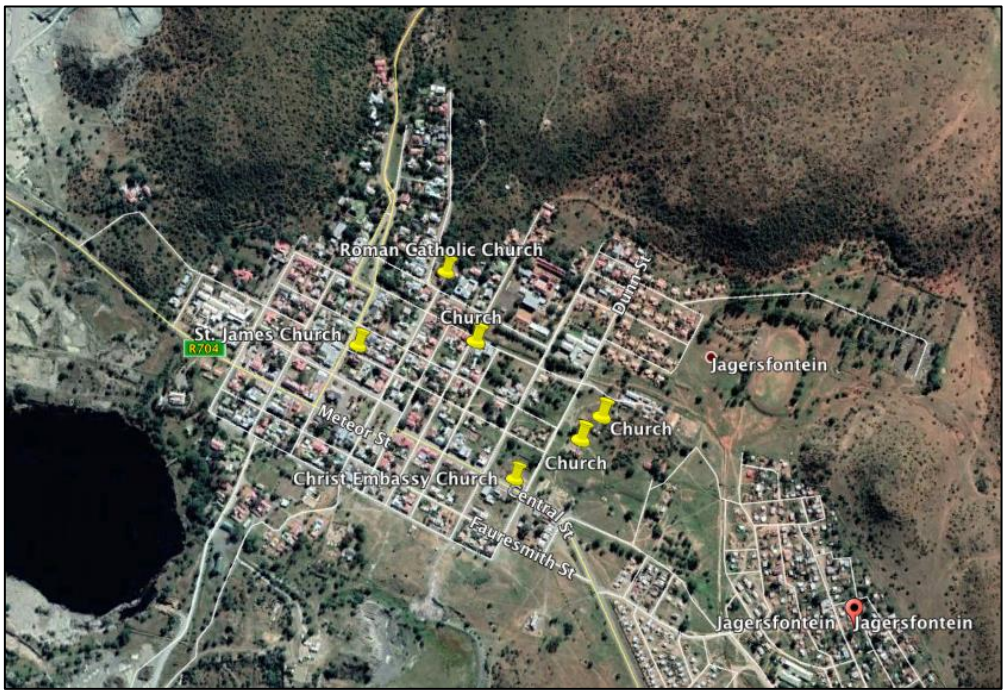

Figure 5-7: Map of churches in Jagersfontein Town
(Source: Google Earth)

5.6 Social Services

Social services in the communities of Jagersfontein are provided by the Kopanong Local Municipality, which is tasked with providing water, sanitation, transportation facilities, electricity, primary health services, education, housing and security to the area.

During the socio-economic study a number of social services were identified, and are detailed in Table 5-4 and Figure 5-8.

Overall, the statistics on access to social services detailed in the Kopanong Local Municipality IDP (2017/22) present a strikingly different reality to what is experienced by households living in the Project Area. Like many rural municipalities struggling with service delivery in South Africa, the quality and efficient delivery of basic services to communities in the Project Area remains a huge challenge for the Kopanong Local Municipality.

Although a majority of households in the Project Area have access to electricity, water and sanitation, extremely high levels of unemployment lead to non-payment of municipal services by impoverished and poor households.

Service delivery is not only a challenge experienced at a household level. Schools and healthcare facilities in the Project Area regularly experience water shortages and power outages for extended periods that further exacerbate the Local Municipality's ability to provide basic services to the communities in the Project Area.

Table 5-4: Social and commercial services in the communities of Jagersfontein

Social Service	Jagersfontein Town	Itumeleng	Charlesville
Education			
Primary school	1	0	0
Secondary School	0		
Combined primary and secondary school	1	1	0
Crèche/play school	1	2	1
Library	1	1	0
Refuse removal			
Landfill site	1	1	0
Churches			
Church	6	Many	1
Soup kitchen	0		
Social grants			
SASSA pay-out point	0	0	1
ATM	1	0	0
Post office	1	0	0
Commercial			
Spaza shops	Many	Many	3
Liquor store	1	4	0
Taverns	3	4	0
Supermarket	1	0	0
Petrol station	1	0	0
Community organisations			
Homebased care	0	0	0
Stokvel	Many		
Farmers Association	0	1	1
Recreational			
Recreational park	1	0	1
Sports field	2	2	0
Security			
Police station	1	0	0
Municipal offices	1	0	1
Magistrates court	1	0	0

Social Service	Jagersfontein Town	Itumeleng	Charlesville
Health			
Clinic	0	1	0
Hospital	1	0	0
Burial society	3	1	0
Cemetery	1	2	0

(Source: Key Informant Interviews, 2019)

Figure 5-8: Map of social services in the communities of Jagersfontein
(Source: Google Earth*)
*For a list of waypoints collected during the socio-economic baseline study refer to Appendix 11.

5.6.1 Education facilities

One primary school and two combined (primary and secondary) schools are located in the communities of Jagersfontein. These include Saint Lawrence Primary School, Jagersfontein intermediate School, and Boaramelo Combined School (Refer to Figure 5-8).

Fauresmith has three public schools namely, Vooruitsig Primary School, Tshwaraganang Primary School, and Olien Secondary School, and one private school, Skynkaroo Independent School.

Two schools in the area, Jagersfontein Intermediate School in Jagersfontein and Olien Secondary School, in Fauresmith, provide boarding facilities to students.

In an interview with the Head of Department at Boaramelo Combined School it was stated that public schools in the area do not charge school fees. “School fees are however subsidised through a number fundraising initiatives like Casual Day (Key informant interview, 2019)”.

In the Project Area most learners walk to school, and very few commute to school with taxis.

Learners at public schools in the Project Area receive a meal that is funded by the Department of Education through the National School Nutrition Programme (“NSNP”).

Boaramelo Combined School is the largest school in the area (refer to Table 5-5). It is a Section 21 public school employing 30 teachers and four support staff recruited from Bloemfontein and neighbouring towns. At the time of the study, 989 learners were enrolled at the school representing a teacher to pupil ratio of 1:33. The pupils at Boaramelo Combined School are mostly from the communities of Jagersfontein and Fauresmith.

Table 5-5: Primary and Secondary Schools in the Project Area

School Name	Location	Teachers	Support Staff	Learners	Fees (per annum)
Boaramelo Combined School	Itumeleng	30	4	989	R0.00
Jagersfontein Intermediate School	Jagersfontein	15	3	460	R0.00
Saint Lawrence Primary School	Jagersfontein	8	3	297	R0.00

(Source: Kopanong Local Municipality, 2019)

The 29 Grade 12 leaners enrolled at Boaramelo Combined School are required to attend Saturday and Sunday classes. To assist Grade 12 learners with studying for their exams, the school invites matriculants to board at the school for their final year. The 2018 matric pass rate for 2018 was 82%, and for the 60 to 70% of students able to attend a tertiary institution, students further their studies at Bloemfontein University. Matric pass rates for other schools in the area are unknown.

Photo 5-1: Boaramelo Combined School in Itumeleng
(Captured November 2019)

During a key informant interview with the Head of Department at Boaramelo Combined School it was stated that most schools in the area experience high levels of absenteeism. “Students do not complete high school, and an estimate 30% of pupils drop out in Grade 9 (key informant interview, 2019)”. This is attributed largely to teenage pregnancies, child-headed households, drug and alcohol abuse, and high levels of unemployment.

Many schools in the area face a number of similar challenges including:

- Water shortages;
- Power outages;
- Textbook shortages;
- High absenteeism and drop out rates;
- Transport for learners to go on outings and attend sporting events;

- Limited sports equipment, grounds and extramural facilities; and
- No libraries and computer labs.

5.6.2 Healthcare Facilities and Infrastructure

In the communities of Jagersfontein there are two healthcare facilities, namely the Diamant District Hospital in Jagersfontein and the Jagersfontein Clinic in Itumeleng. In Fauresmith there is a Municipal Clinic.

Clinics in the area operate during the week between 7:30 and 16:00 and their services include immunisations, family planning, antenatal/postnatal care, HIV Counselling and Testing, ARV and maternity services. For emergencies community members visit the Diamant District Hospital in Jagersfontein, which has 28 beds and three wards including a maternity ward, general ward, and paediatric ward.

In the household survey, households were asked which healthcare facility they primarily use. A majority (84%) of households reported the clinic, 6% reported the Diamant District Hospital, and a further 6% reported visiting a private doctor (refer to Figure 5-9). Of the households who reported not visiting a healthcare facility, reasons provided include preferring to self medicate or visit traditional healers.

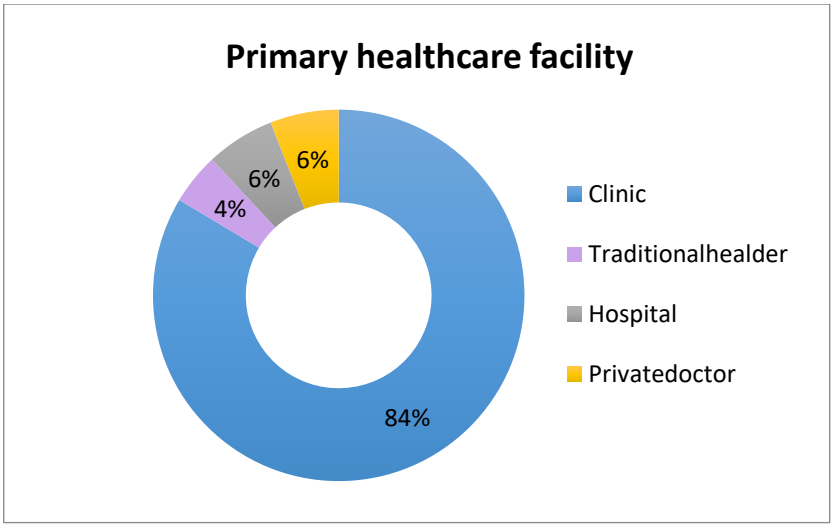

Figure 5-9: Primary healthcare facilities of surveyed households
(Source: Household survey, 2019)

In the past 12 months, 100% of household members delivered their babies at the Diamant District Hospital. No babies we delivered at a clinic or at home.

In an interview with the doctor at the Diamant District Hospital it was reported that the hospital employs three community service doctors, four permanent doctors, and 35 nurses. Staff at the hospital are mostly from Bloemfontein and the surrounding towns of Koffiefontein, Fauresmith, and Letsemeng.

90% of the patients treated at the hospital are unemployed.

Some of the challenges experienced by healthcare facilities in the area include:

- Water shortages;
- Power outages; and
- Medical supplies and medicine shortages.

Common ailments and diseases

At the hospital it was reported that the main illnesses in the area are HIV and AIDS, Tuberculosis, and general chronic disease like High Blood Pressure and Diabetes.

In the household survey, households reported numerous ailments and diseases. The most commonly reported ailments and diseases included high blood pressure, diabetes, diarrhoea, colds and flu, tuberculosis, and STDs/HIV.

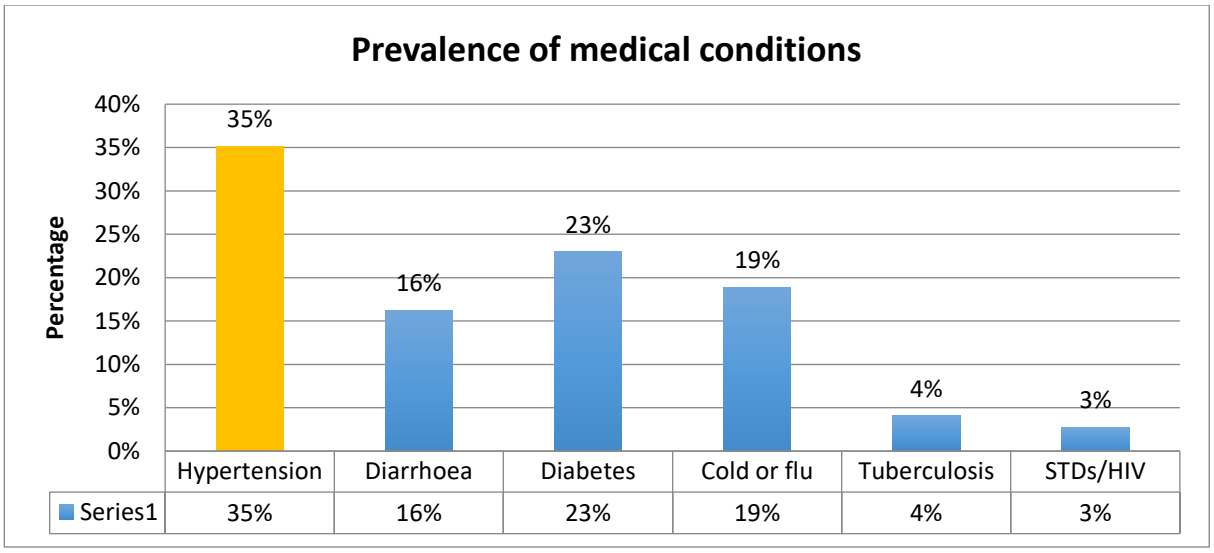

Figure 5-10: Prevalence of medical conditions of surveyed households
(Source: Household survey, 2019)

Traditional Medicine

Only 4.48% of surveyed households in Itumeleng reported consulting with traditional healers.

5.6.3 Electricity

Surveyed households indicated that prepaid electricity is their primary source of electricity for cooking and lighting.

Although 100% of surveyed households have access to prepaid electricity, limited financial resources often restrict households from making use of electricity, which is surprisingly not the case in these communities. No households in the household survey indicated using alternative energy sources for cooking and lighting.

5.6.4 Water Supply

Unlike the Kopanong Local Municipality where 99% of households have access to piped municipal water, only 70% of the surveyed households in the communities of Jagersfontein have access to piped municipal water (refer to Table 5-6). Some households in Jagersfontein and Itumeleng access water from either a mobile municipal water tank or a communal water source.

In Jagersfontein 61% of households reported having access to piped water, while 28% collect water from communal taps.

In Itumeleng 68% of households have access to piped water, and 28% receive water from a mobile municipal tank.

A 100% of households in Charlesville reported having access to piped water.

Table 5-6: Primary water sources in the Project Area

Primary water source	Jagersfontein	Itumeleng	Charlesville
Outside tap prepaid meter	17%	30%	78%
Household prepaid meter	44%	38%	22%
Municipal mobile water tank	11%	28%	0%
Communal tap	28%	0%	0%
Communal borehole	0%	5%	0%

The Xhariep Integrated Development Plan (2017/18) describes the drinking water as of 'variable quality'.

Most households in the Project Area consume water without any sterilisation or filtering treatment, possibly attributing to the high prevalence of diarrhoea, particularly amongst children in the Project Area.

Water shortages are a problem in the area, which is compounded by poor service delivery and a severe drought. Community members accuse JD of stealing their water and it is believed by community members that JD is contributing significantly to the water shortages in the area. One community member who sinks boreholes for the Local Government, reported, that since the operation started in 2012, boreholes need to be dug deeper.

An Integrated Waste and Water Management Plan (October, 2019) forms part of the IWUL Application.

5.6.5 Sanitation

In the Project Area 100% of households reported to have flushing toilets. Some 52.17% of households reported having outside flushing toilets, and 47.83% reported having inside flushing toilets.

Most households in Jagersfontein and Charlesville have inside flushing toilets (89%), while 78% of households surveyed in Itumeleng have outside flushing toilets.

5.6.6 Refuse Removal

In the household survey, households reported that they do not have access to municipal waste removal, and that most households dump their refuse at various sites in the community.

In Itumeleng and Charlesville 67% of the surveyed households reported dumping their refuse, while in Jagersfontein 67% of the households reported municipal refuse collection.

As an observation, Jagersfontein and Charlesville feel a lot cleaner than Itumeleng where a blanket of litter strewn across dirty streets seems to engulf the local environment. In Itumeleng it is therefore not surprising that only 21.05% of surveyed households reported intermittent municipal refuse collection.

According to the Kopanong IDP (2017/22) the Jagersfontein landfill site has not obtained environmental authorisation, and refuse removal in the area is compromised by the constant mechanical breakdown of an aging fleet of refuse removal trucks.

5.6.7 Roads and Transport

Access to Jagersfontein is either via the R704 between Fauresmith and Trompsburg, or via the R706 from Bloemfontein. Both are single carriage, and generally well-maintained, tarred roads.

The main road through the town of Jagerfontein is tarred, and all other roads in the area are dirt roads.

In the communities people mostly walk from place to place. Very few households in the survey indicated using public transport, and private cars. Refer to Figure 5-11.

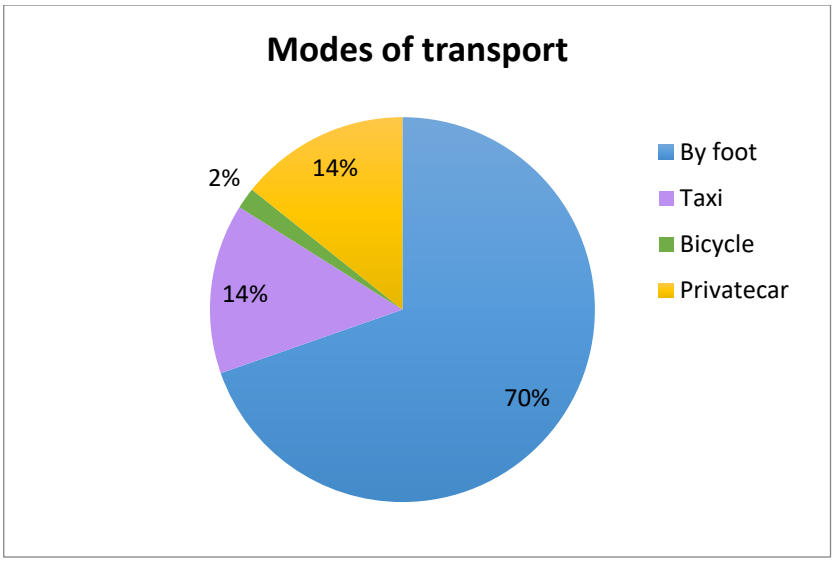

Figure 5-11: Primary modes of transport
(Source: Household survey, 2019)

The distance from communities in the Project Area to the main road vary, and some households mentioned that it takes approximately 30 minutes to walk to the R706. Once at the main road, people hitchhike or catch private taxis to Trompsburg or Bloemfontein. Travel costs vary depending on the mode of transport but range between R150.00 and R250.00 return.

It was reported that very few taxis operate in the area.

5.7 Housing structures

There are a variety of housing types and structures in the Project Area. Some include large freestanding houses comprising three or four bedrooms, while other housing types include RDP houses and shanties erected from corrugated iron.

In Jagersfontein and Charlesville a majority of houses are built from cement bricks with tiled roofs, and very few households have an outbuilding (or shanty) for extended family members or renters.

The properties in the area look old and dilapidated. Some are desperately neglected, while others proudly represent the history of a bygone era. No traditional housing structures were evident in Jagersfontein and Charlesville.

Houses in Itumeleng comprise mostly RDP houses, and informal dwellings constructed using corrugated iron and wire. Most houses in Itumeleng have an outside building or shanty for extended family members or renters.

Very few households reported having vegetable gardens (24.64%), no households reported having livestock enclosures, and only 4.35% of housing structures double as a residential home and a business.

Photo 5-2: Typical housing structures in Charlesville
(Captured November 2019)

Photo 3-3: Typical housing structures in Jagersfontein (left) and Itumeleng (right)
(Captured November 2019)

5.8 Household Assets

Household assets are an indictor of wealth and disposable income.

In the Project Area 20.29% of the households surveyed reported owning luxury items like motorcars, 5.8% generators, and 21.74% laptops (refer to Table 5-7).

While only 4.35% of households reported owning dishwashers, 52.17% reported owning washing machines, 88.41% fridges, and 86.96% electric stoves.

Given the high levels of poverty in the community it is surprising that so many households own fridges and electric stoves, which are not considered necessity items, and in poorer communities are often purchased as laybys further indebting struggling households.

More common assets owned by households in the area include 85.51% radios, 86.96% televisions and 81.16% cellular phones, which are the main source of entertainment and communication in the area.

No households reported owning solar panels, and very few households reported owning water tanks.

Table 5-7: Household assets

Item	Jagersfontein	Itumeleng	Charlesville	Total	Percentage
Bicycle	0	7	0	7	10,14%
Car	5	7	2	14	20,29%
Cell phone	17	31	8	56	81,16%
Dishwasher	2	1	0	3	4,35%
DVD/Video Player	16	28	9	53	76,81%
Electric Stove	15	36	9	60	86,96%
Fridge	16	36	9	61	88,41%
Gas/Paraffin stove	2	4	0	6	8,70%
Generator	2	2	0	4	5,80%
Laptop	6	8	1	15	21,74%
Microwave	15	23	5	43	62,32%
Motorcycle	2	2	0	4	5,80%
Radio	16	34	9	59	85,51%
Satellite dish	8	18	4	30	43,48%
Solar panels	0	0	0	0	0,00%
Television	15	36	9	60	86,96%
Tumble dryer	3	4	0	7	10,14%
Washing machine	12	21	3	36	52,17%
Water tank (Jojo)	1	2	0	3	4.35%
Wood stove	2	4	0	6	8,70%

(Source: Household Survey, 2019)

5.9 Livelihood Strategies

5.9.1 Employment

In the communities of Jagersfontein, 72% of the working population are either unemployed, discouraged jobseekers or economically inactive, which is higher than the Local Municipality unemployment rate of 64%.

In Jagersfontein the unemployment rate is 64.52%, while in Itumeleng it is 68.12%, and in Charlesville the unemployment rate is extremely high at 88.89%. This demonstrates that a higher percentage of the economically active population in Jagersfontein are employed in comparison to Itumeleng and Charlesville, and that possibly Charlesville is the poorest community in the area. This would however require further analysis given that only nine households in Charlesville were surveyed, and possibly these randomly selected households are not a representative sample of the area.

Of the economically active population that is employed, 58% are formally employed, and some 42% are informally employed.

Amongst surveyed households the Government is the largest employer, employing some 45% of the surveyed wage earners. Another significant employer is privately owned business (38%), and very few household members in the survey indicated that they are employed by Jagersfontein Developments.

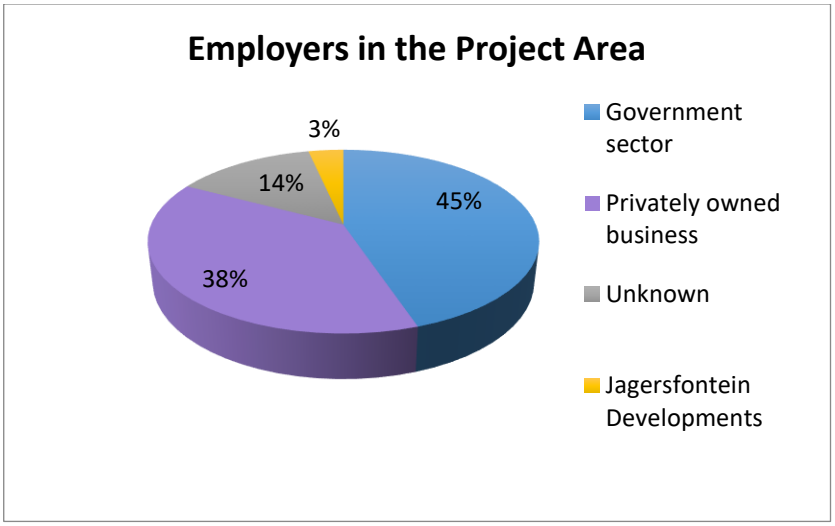

Figure 5-12: Employers on the Project Area
(Source: Household survey, 2019)

5.9.2 Subsistence Farming

In the Project Area community members stated that very few households rely on subsistence farming, and that vegetable gardening and livestock rearing was only practiced by about 30% of the households.

Vegetables and crops grown in the backyards include spinach, carrots, tomatoes, cabbage, pumpkin and onions. Of the 27.54% of households surveyed with vegetable gardens only two grew maize.

In addition, 42% of the households reported owning the following fruit trees, grape vines, apricot, fig, peach, and apple trees.

Livestock include cattle, sheep, pigs and goats, as well as horses, which roam freely, and shepherds are employed to look after larger herds. However, most owners of livestock own small herds, and only about 12 households in the area own large herds of cattle, goats and sheep.

About 30 to 35% of households were reported to own chickens, and some households also reported owning doves, geese and turkeys.

Very few households reported fishing and hunting, although this is known to occur in these communities.

5.9.3 Collecting Herbs and Medicinal Plants

No data was gathered on herb and medicinal plant collection, and even though 5% of households stated that they prefer to self medicate rather than visit a healthcare facility, it is unknown whether these households do self medicate with herb and medicinal plants.

5.9.4 Businesses and Retail Stores

In the Project Area a number of businesses, retail stores, and tuckshops were identified (refer to **Table 5-4**).

Community members reported not having to travel to Bloemfontein or Trompsburg to get fresh produce, domestic products and other household essentials. These are locally available and are supplied by tuckshops, retailers and the Usave supermarket in Jagersfontein.

In Charlesville only one tuckshop was identified, while many were identified in Itumeleng.

5.9.5 Skills and Artisans

In communities it was reported that a number of community members are artisans with varying skills. These skills include welding, driving, operating heavy machinery, construction, bricklaying, baking, catering, and sewing.

Most of the community members did however state that although community members are skilled majority of them do not have the required qualifications for formal employment.

Skills training and development was identified as a priority community need.

5.10 Income and Expenditure

5.10.1 Income

As a direct result of the high unemployment rates in the project area, a significant number of households rely on social grants including child and pension grants.

In the household survey, households were asked to provide details on their incomes. Given that only 27 households provided this information (39.13%), the average monthly income for households in these communities is grossly estimated at R2,772.22.

For the few households that did provide information on their incomes, primary sources of income include, state pension, temporary employment, child grant, sales from livestock, remittances and rental incomes.

5.10.2 Expenses

Households in the Project Area reported that their main monthly expenses included food, electricity, and airtime. Households reported that average monthly spend on food is R995.38, while for electricity it is R333.00, and for airtime it is R158.57. No households in the survey indicated spending money on water or rates and taxes.

Other household expenses include satellite (DSTV), insurance policies, burial and saving societies.

5.11 Cultural Assets

Communities in the Project Area identified a number of key cultural assets including the Jagersfontein Pit, a number of buildings in the town of Jagersfontein (the Old Town Hall and the 1881 Roman Catholic Church), as well as, cemeteries and initiation sites.

During key informant interviews and the household survey, many community leaders and members expressed a deep sense of community pride when speaking about the Pit and the old heritage buildings in Jagersfontein. For a majority of community members, the Pit is considered a community asset with enormous historical value and tourism potential. It would seem that the historical value and tourism potential of the Pit provides communities in the area with a sense of wellbeing and hope for a better future.

For more information on the assets in the area refer to the Heritage Impact Assessment, 2019.

5.12 Crime

In the household survey 66% of the households reported that crime is a problem in the area.

Housebreakings and petty theft were reported as the main crimes in the Project Area. According to community members, crime is increasing and more cases of domestic violence, rape and murder are being reported. Some households also reported livestock theft.

Of the households surveyed, 74% feel that drugs are a problem in the area, while 61% reported that alcohol abuse is a problem.

Many community members feel that young male adults are abusing drugs, and in particular boys still at school. These boys are believed to do petty crime to maintain their drug addictions.

Although unemployment is high, it was noted that there is no prostitution occurring in the Project Area.
Crime rates in Charlesville and Jagersfontein were reported to be lower than Itumeleng.

5.13 Vulnerability

Vulnerability is defined as the inability to generate sufficient resources to feed, clothe, shelter, and meet basic human needs (i.e. water, sanitation, healthcare services, and education).

In the Project Area the vast majority of the population can be regarded as vulnerable due to high levels of unemployment and poverty. However, in terms of identifying the most vulnerable groups these include those who cannot work the land, have no means of generating an income, have no family support, and struggle to access social facilities. These may include:

- Children and Youth: Approximately 27% of the population in the Project Area are under 18 years of age. The children and youth most at risk in this context are those in households headed by single parents or by relatives replacing parents (i.e. grandparents, aunt and uncles). Child headed households are also in a vulnerable position. Although no child-headed households were identified through the survey process, community members reported high numbers of child-headed households. Primary needs of youth and children include education, access to recreational facilities and job opportunities.
- Women and Widows: Among women, groups requiring particular support are single mothers and widows. In the household survey 25% of the households surveyed were female-headed households. Some of the primary needs for women include access to health facilities, child support grants, job opportunities and education.
- Elderly: Often the elderly support and assist the household with livelihood activities and social grant money from pensions, which is evident in these communities. The primary need for these people is access to health facilities. Elderly people mostly at risk are those without support, and in the Project Area 5% of the population are made up of people who are older than 76 years.
- Disabled and Chronically Ill: This includes households and families providing support to disabled and chronically ill people. Those at risk are disabled people who fall outside this support system. The population in the area comprises very few disabled people, 3% of the population are disabled, and their primary needs include access to specialised healthcare, therapy, and educational facilities.

In the Project Area the Itumeleng Community Trust is the only Non-Profit Organisations (NPOs) operating in the area that is able to assist vulnerable people and households.

Amongst the households surveyed, 85.51% confirmed that they know about the Itumeleng Community Trust, and of these households only 26.09% feel that the Trust is serving the interests of the community.

Overall community members feel that the Trust is not benefiting the community. The Trust is perceived to support a handful of community members, and communities are disappointed that it is not operating openly and transparently. The Trust was criticised for not engaging with community members, and even though JD established the Trust to serve the development needs of the community, community members feel the Trust does not care about their needs.

Some community members stated that the training programmes provided by the Trust do not assist community members with finding employment locally, and that community members have to seek work elsewhere. It was suggested that the Trust undertake an assessment to determine the skills shortages in the area and possibly focus on skills development in business administration, computer literacy, and nursing.

Of the few in support of the Trust's activities, it was expressed that the Trust is assisting with improving the lives of many young children and in particular, learners.

5.14 Perceptions of Project Area Communities

5.14.1 Development Challenges

In the Project Area communities identified the following key development challenges:

- High levels of unemployment;
- Poor service delivery;
- Few skills development and training opportunities;
- Drug and alcohol abuse;
- HIV and AIDS; and
- Poor investment in tourism opportunities.

Although the communities in the Project Area understand that the Local Government is responsible for service delivery and infrastructure development, community members in key informant interviews and the household survey expressed that local businesses, and JD in particular, have a role to play in community development.

5.14.2 Community Perceptions

The expectation for JD to improve the lives of community members was strongly expressed by community leaders and community members attending the public consultation meetings held in 2019 and 2021.

Overall, community members feel that JD is not doing enough to assist communities with employment, skills development, investment in tourism opportunities, small business development, and community projects.

In the household survey, an overwhelming majority (79.39%) of households are not in support of the proposal to backfill the Jagersfontein Pit. This is mainly attributed to the perception that many households feel that the proposed project will destroy the heritage value of the Pit and any potential for tourism opportunities. Some comments raised in the household survey include:

- *"Filling the pit will close the history of the entire Jagersfontein, erasing its heritage."*
- *"It is not going to benefit the community but the mine owners."*
- *"It is our heritage and we must treasure it."*
- *"It is our heritage and tourism attraction. If the Pit is filled it will destroy us."*

During the household survey in 2019 only 37.31% of the households surveyed knew about the proposal by JD to backfill the Pit. A lack of information and project awareness could be attributing to negative project perceptions, but it is more likely that the lack of support for the proposed project is stemming from strained community relations.

In the public consultation meeting held on at the Mayibuye Hall in Itumeleng on the 26th November 2019, the 15 meeting participants expressed disappointment with empty promises made by JD, and an overwhelming majority stated that they would prefer JD to build another FTSF rather than destroying the heritage value of the Pit. A few meeting participants were of the view that JD should be allowed to backfill the Pit only if commitments were made by the Tailings Operation to benefit the local communities.

Other perceptions expressed by community members at this meeting include:

- *"The Tailings Operation should be assisting with tourism opportunities in Jagersfontein";*
- *"JD does not employ locals, and most of their employees are from North-West";*
- *"JD cannot be trusted. The company does not follow through on its promises";*
- *"There is a lack of information on the Trust and the operation";*
- *"Tourism is important and I would love to see the Pit and tourism industry in Jagersfontein revived. The "big persons" must come to the party to promote Jagersfontein";*
- *"Let them focus on the development of Jagersfontein. Bring Municipality on board to get land for a new fine tailings storage facility and create jobs."*
- *"We want to know if we allow them to fill the Pit, what additional jobs will be created."*

For a copy of the minutes of the public consultation meeting held on the 26th November 2019 refer to Appendix 5.

In the public consultation meeting held at the Mayibuye Hall in Itumeleng on the 2nd December 2021, which was attended by approximately 100 community members including the Mayor of Kopanong, and the Ward Councillor, it was expressed that JD should not be granted a permit to backfill the Jagersfontein Pit.

The main reasons provided by community members include:

- JD's lack of community development projects that seek to benefit and uplift the community;
- The irreparable damage to the Pit's tourism potential;
- The lack of belief in the validity of the specialist reports; and
- Failure by JD to respectfully engage with the community.

The meeting participants used the opportunity to express a number of serious allegations against JD and the ITC, which clearly demonstrates a lack of trust between community members and JD. For a copy of the minutes of the public consultation meeting held on the 2nd December 2021 refer to Appendix 7.

During the public consultation meeting held on the 2nd December community members were informed that the following specialist reports would be made available for review at the Itumeleng Library between the 10th December 2021 and 4th February 2022:

- Civil Engineer Design Drawings and Report;
- Integrated Water and Waste Management Plan;
- Waste Classification;
- Geohydrological assessment and modelling reports;
- A motivation and formal application to SAHRA;
- A Heritage Impact Assessment; and
- Socio-economic Impact Assessment.

A total 41 comments were submitted during the public review period. Of the comments submitted, 90% were in favour of JD backfilling the Pit, thereby ensuring that continued operations would maintain employment opportunities for local communities.

For a copy of the comments submitted during the public review period refer to Appendix 10.

6. Potential Socio-economic Impacts

The purpose of this section is to identify potential negative and positive social impacts of the proposal by JD to backfill the Jagersfontein Pit. These impacts are divided into project development Phases, and include impacts identified by community members during public consultation meetings, and the socio-economic baseline study.

In the identification, rating and mitigation of impacts, impacts are grouped according to the following impacts:

- Economic;
- Social;
- Safety and health; and
- Cultural and heritage.

Each impact grouping was assessed against the socio-economic baseline data and the proposed project description.

6.1 Economic impacts

6.1.1 Job creation and increased employment opportunities

Should JDs section 38 application be approved, it is expected that the Tailings Operation will continue to generate some 200 direct employment opportunities.

Currently the operation employs some 180 people, and 63% of the labour force is made up of local community members residing in the communities of Jagersfontein and Fauresmith. This means that a significant amount of the current annual wages filter back into the local economy.

If the backfill of the Pit is approved, the construction phase of the proposed project would require JD employing 15 people for approximately three months, and appointing a civil construction contractor who will be required to hire local labour.

In addition the proposal by JD to backfill the Pit will ensure an extension of the Life of Operation for a further 8 years, which will prevent retrenchments and early operation closure.

Employment provides many socio-economic benefits to employees and their dependents, including:

- Improved material wealth and standard of living;
- Enhanced potential to invest in and improve access to social services such as education, health services, etc. (which may be provided directly by the company to employees and/or employees may now have the funds to pay for these services); and
- Employment and training of unskilled workers facilitates skills development and improves future employment prospects.

These socio-economic benefits have the following economic multiplier effects:

- Increased demand for local goods and services;
- Increased money circulating in the local economy as a result of increased demand for local goods and services; and

- Additional jobs created due to the increased demand for local goods and services.

Management/Enhancement Measures

The following mitigation measures can further enhance the benefits of local employment generation:

- Draw on local skills registers and employee databases to employ local workers if qualified applicants with the appropriate skills are available.
- Develop a local recruitment procedure.
- Ensure Contractors' Agreements make provision for contractors to hire locals if the skills are available.
- Work with community representatives to develop open and transparent recruitment procedures that are disclosed to community members.
- Use various mechanisms to advertise job opportunities in local communities.
- Continue to provide skills development training for local people through internships, scholarships, and/or vocational and skills training programmes.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Direct and indirect employment generated during the construction, operations and closure phases of the proposed project.		
Risk/ Impact	Job creation and increased employment opportunities		
Project Phase	Construction Operations Closure		
Nature of Impact	Positive		
Type of Impact	Direct Indirect		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Likely	3	4
Duration	Long-term Even though the benefits derived from employment experience, skills development and training are permanent, it is likely that the economic benefits of employment will be mostly experienced during the Life of Operation, and cease during decommissioning and closure.	3	3
Extent	Area of Influence Employment opportunities will affect the wider area of influence	3	3
Receptor Sensitivity	Moderate	3	3
Magnitude	Moderate	3	4

Impact Significance	Given the high levels of unemployment in the communities neighbouring the proposed Project Area, the benefits of employment will be significant not only for those employed but also the wider area of influence including economic hubs and local vendors.	Moderate 12 3	High 13 4
Mitigating and Monitoring Requirements			
Required Management Measures	• Draw on local skills registers and employee databases to employ local workers if qualified applicants with the appropriate skills are available; • Develop a local recruitment procedure; • Ensure Contractors' Agreements make provision for contractors to hire locals if the skills are available; • Work with community representatives to develop open and transparent recruitment procedures that are disclosed to community members; • Use various mechanisms to advertise job opportunities in local communities; and • Continue to provide skills development training for local people through internships, scholarships, and/or vocational and skills training programmes.		
Required Monitoring (if any)	Monitor the numbers of local employees employed by the operation Keep a record of posted vacancy adverts and interview schedules Track number of employees hired by contractors		
Responsibility for implementation	HR Manager		
Impact Finding			
Impact Finding	Impact can be enhanced through HR policies and skills development and training programmes.		

6.1.2 Local procurement opportunities

Since 2012 JD has spent a total of R30,060,183 procuring local goods and services in the communities of Jagersfontein, Fauresmith, and surrounding regions. Should the application under section 38 be granted, JD will continue to procure services and goods locally and regionally from local companies.

In the public community meetings it was also suggested that JD should prioritise appointing black owned contractors and consultancies. It is believed that these companies would hire locally, and money spent on local procurement would filter directly back into the local economy.

The proposal by JD to backfill the Pit will ensure an extension of the Life of Operation by 8 years, which will prevent early operation closure, and the termination of local procurement.

Management/Enhancement Measures

The following mitigation measures aim to enhance local procurement generated by the Tailings Operation:

- Prioritise contracting local companies.

- Formalise local procurement procedures in Supply Chain policies and procedures (Supply Chain Management Plan).
- Work with community representatives to develop an open and transparent tender process that is disclosed to local business forums.
- Use various mechanisms to advertise tender opportunities in local communities.
- Provide training and support to Small Micro and Medium Enterprises.

Significance Rating

Impact Component	Impact	Significance prior to Mitigation	Significance with Mitigation
Activity	Direct and indirect procurement opportunities during the construction, operations and closure phases of the proposed project.		
Risk/ Impact	Local procurement opportunities		
Project Phase	Construction Operation Closure		
Nature of Impact	Positive		
Type of Impact	Direct Indirect		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Likely	3	4
Duration	Long-term Local procurement benefits will most likely be experienced during the Life of Operation, and will cease during decommissioning and closure.	3	3
Extent	Area of Influence Local procurement will affect the wider area of influence	3	3
Receptor Sensitivity	Moderate	3	3
Magnitude	Moderate	3	4
Impact Significance	Since 2012 the operation has spent R30,060,183 on local procurement. In a depressed economic environment where many smaller companies are struggling to survive, the benefits to local companies will be significant.	Moderate 12 3	High 13 4
Mitigating and Monitoring Requirements			
Required Management Measures	• Prioritise contracting local companies; • Formalise local procurement procedures in Supply Chain policies and procedures (Supply Chain Management Plan); • Work with community representatives to develop an open and transparent tender process that is disclosed to local business forums;		

	• Use various mechanisms to advertise tender opportunities in local communities; and • Provide training and support to Small Micro and Medium Enterprises.
Required Monitoring (if any)	Monitor the numbers and spend on local businesses. Keep records of tenders. Monitor SMME training and benefits of training to SMMEs.
Responsibility for implementation	Supply Chain Manager
Impact Finding	
Impact Finding	Impact can be enhanced through Supply Chain policies and skills development and training programmes.

6.1.3 Improved skills development and training

Skills development and capacity building is fundamental to local employment generation, sustainable development and poverty alleviation in the area, particularly amongst the youth.

In communities it was reported that a number of community members are artisans with varying skills, but that a majority of these skilled community members do not have the required qualifications for formal employment.

Skills training and development was identified by community members during the 2019 socio-economic study, as a priority community need.

In order to employ locally JD in 2012 initiated an Artisan Internship Programme that aimed to generate employment opportunities for local community members.

Currently JD sponsors five local students who are undergoing artisan training in diesel mechanics and welding at De Beers, and since 2012 the Tailings Operation has spent a total of R3,562,948.30 on training local community members.

These skills development and training programmes will continue if JD is awarded the Permit to backfill the Pit.

Management/Enhancement Measures

In order to employ locals, skills development and training programmes that target both employees and the broader populations are required. Activities to enhance these programmes might include:

- Undertake a skills needs analysis to determine the level of skills in the community, and identify semi-skilled community members;
- Assist skilled community members with acquiring certificates and qualifications for formal employment;
- Develop and implement skills development and training programmes that target both employees and the broader local population including Jagersfontein, Itumeleng, Charlesville and Fauresmith.
- Continue to provide and facilitate the training of local people through internships, scholarships, and/or vocational and skills training programmes.

Significance Rating

Impact Component	Impact	Significance prior to Mitigation	Significance with Mitigation
Activity	Provide skills development and training		
Risk/ Impact	Improved skills development and training		
Project Phase	Construction Operations Closure		
Nature of Impact	Positive		
Type of Impact	Direct Cumulative		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	3	4
Duration	Permanent The benefits derived from skills development and training are permanent.	4	4
Extent	Area of Influence Skills development and training will affect the wider area of influence	2	2
Receptor Sensitivity	Moderate	1	3
Magnitude	High	3	4
Impact Significance	Skills development and training will assist with improving employment opportunities with JD and other businesses in the broader Area of Influence.	Moderate 10 3	High 13 4
Mitigating and Monitoring Requirements			
Required Management Measures	• Undertake a skills needs analysis to determine the level of skills in the community, and identify semi-skilled community members; • Assist skilled community members with acquiring certificates and qualifications for formal employment; • Develop and implement skills development and training programmes that target both employees and the broader local population including Jagersfontein, Itumeleng, Charlesville and Fauresmith; and • Continue to provide and facilitate the training of local people through internships, scholarships, and/or vocational and skills training programmes.		
Required Monitoring (if any)	Monitor the numbers of training programmes, participants and pass rates. Track employment and recruitment post training.		
Responsibility for implementation	HR Manager		
Impact Finding			
Impact Finding	Impact can be enhanced through HR policies and Community		

	Development Programmes that focus on skills development and training.

6.1.4 Contribution to Government revenue and the fiscals of local municipalities

Regional and local spending in support of the operations is another direct positive impact. The Government will derive revenue from the Tailings Operation through various forms of taxes, including but not limited to corporate tax, contributions to social funds, value added tax, diamond export duties, as well as spend on municipal services like water and electricity.

Since 2012 JD has spent more than R140,055,218.70 on water, sewage and electricity, and a further R17,556,718.50 on skills, enterprise and community development programmes. If awarded a permit to backfill the Pit, JD will continue to spend on municipal services and community development projects including investment into schools and healthcare.

The continued revenue derived from the operation can be utilised by the Government, and the Xhariep District Municipality and the Kopanong Local Municipality in particular, for community development and improved service delivery.

Management/enhancement measures

Government income is determined by tax regimes and world market prices for commodities, and as such revenue from minerals fluctuates. In addition, JD will not be able to influence the government on how to spend these earnings, nor will the operation be able to stipulate conditions for payment. As such, no mitigation measures are recommended for this impact.

It is however expected that most of this expenditure will benefit the communities of Trompsburg, Jagersfontein, Itumeleng, Charlesville and Fauresmith.

Where feasible JD can engage with the Government to promote social development in local communities.

At closure the revenue generated by the operation will cease. No revenue will be earned by the Government, which could negatively affect government spending on social services in the area. Given that JD is unable to influence government spending, no mitigation measures are recommended for this negative impact. However, the operation will consult with the relevant authorities to ensure that they are able to plan for closure.

Significance Rating

Impact Component	Impact	Significance prior to Mitigation	Significance with Mitigation
Activity	The Government will continue to derive revenue from the operation through various forms of taxes, including but not limited to corporate tax, value added tax, and diamond export duties, as well as spend on municipal services and contributions to social development.		
Risk/ Impact	Contribution to Government revenue and the fiscals of Local Municipalities		
Project Phase	Construction Operations		
Nature of Impact	Positive		
Type of Impact	Direct Cumulative		

	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	4	
Duration	Long Term	3	
Extent	Regional/Provincial/National	4	
Receptor Sensitivity	High	4	
Magnitude	High	4	
Impact Significance	This rating assumes that the Government will ustilise revenue derived from the operation, and the Xhariep District Municipality and the Kopanong Local Municipalities in particular, for improved service delivery and community development.	High 15 4	
Mitigating and Monitoring Requirements			
Required Management Measures	Not applicable		
Required Monitoring (if any)	Not applicable		
Responsibility for implementation	None		
Impact Finding			
Impact Finding	The positive benefits of the impact are high and do not require mitigation.		

6.1.5 Tensions over limited employment opportunities and procurement contracts

While it is expected that a limited portion of the local population might be able to benefit from employment opportunities and procurement contracts with JD, a significant portion of the population will not be employed.

As it currently stands JD is accused of not creating enough local employment, and it is widely believed that JD is employing people from the North West Province rather than people from the local communities of Jagersfontein.

Negative perceptions have already fuelled violent protests, and towards the end of 2018, company assets to the value of over R500,000.00 were damaged. It is thus likely that if JDs section 38 application is granted, and continues operating, that this will lead to increased community tension and violent protests.

Management/Mitigation Measures

The following mitigation measures aim to reduce the tension include:

- Work with community representatives to prepare a open and transparent recruitment process that is widely disclosed to community members;
- Prioritise the employment of local community members within the Project Area;
- Provide employment options that allow a range of people to benefit from employment opportunities, where possible (e.g., non-shift or part-time work);

- Ensure contractors hire local community members;
- Use various mechanisms to advertise employment opportunities in neighbouring communities;
- Maintain recruitment and employment records, distributing short-term opportunities to as many community members as possible; and
- Regularly provide feedback to communities including disclosing any updates to employment figures.

Significance Rating

Impact Component	Impact	Significance prior to Mitigation	Significance with Mitigation
Activity	Prioritising certain communities and community members for employment at the operation will lead to increased community tension and violent protests.		
Risk/ Impact	Tensions over limited employment opportunities and procurement contracts		
Project Phase	Construction Operations		
Nature of Impact	Negative		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Possible	3	2
Duration	Long Term Impacts will only cease after closure.	3	3
Extent	Site The impact is felt by communities neighbouring the operations	3	2
Receptor Sensitivity	Moderate	4	3
Magnitude	Moderate	-4	-3
Impact Significance	Given the high levels of unemployment in the area, the potential for conflict is extremely high.	High 13 -4	Moderate 10 -3
Mitigating and Monitoring Requirements			
Required Management Measures	• Work with community representatives to prepare a open and transparent recruitment process that is widely disclosed to community members; • Prioritise employment of local community members within the Project Area; • Provide employment options that allow a range of people to benefit from employment opportunities, where possible (e.g., non-shift or part-time work); • Ensure contractors hire local community members; • Use various mechanisms to advertise employment opportunities in neighbouring communities; • Maintain recruitment and employment records, distributing short-term opportunities to as many community members as possible; and		

	• Regularly provide feedback to communities including disclosing any updates to employment figures.
Required Monitoring (if any)	Review recruitment records. Monitor the number and area of origin of local employees.
Responsibility for implementation	HR Manager
Impact Finding	
Impact Finding	Impact can be managed through HR policies, and an open and transparent recruitment procedure

6.1.6 Development of the tourism potential of the Pit

Given that the Pit might be the world's biggest and oldest vertical handmade diamond mine of its kind, it is considered by some a heritage asset with significant historical value and tourism potential.

The Pit is however unstable, and breaking back at a rate of 1m per year. As it currently stands the Pit is unsafe for public viewing. Two viewing platforms have fallen into the Pit, and to prevent serious injuries and potential fatalities, JD has fenced off the area and closed the museum located 50m from the Pit.

The proposal by JD to backfill the Pit with fine and coarse tailings has been identified as the only viable way to stabilise the Pit. If the Pit is backfilled, tailings will fill the Pit to approximately 60m from the rim. This will permanently change the visual appearance of the Pit, but this might not necessarily destroy the tourism potential of the Pit. As a result of the backfilling process, the Pit will be rehabilitated, and be safe to access for viewing by the public.

The backfilling of the Pit therefore has the potential to develop the tourism value of the Pit.

If the proposed project is approved, JD has committed to refurbishing the museum and the gantry, which will have a significant impact on attracting tourists to view the Pit and visit Jagersfontein Town.

Management/Mitigation Measures

Suggested measures to develop the tourism potential of the Pit include:

- Refurbish the Pit museum and gantry;
- Appoint a museum curator and additional support staff to manage the Pit museum and the gantry;
- Develop a Heritage Management Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein;
- Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area; and

- Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and skills applicable to the tourism industry.

Given the degraded state of the heritage assets in Jagersfontein, the success of these mitigation measures is dependant on external stakeholders investing in tourism opportunities in the Jagersfontein Town. JD on its own is unlikely to revive tourism in Jagersfontein without significant contributions from development partners.

Significance Rating

Impact Component	Impact	Significance prior to Mitigation	Significance with Mitigation
Activity	Pit stabilisations could result in improved tourism opportunities		
Risk/ Impact	Development of the tourism potential of the Pit		
Project Phase	Operations Closure		
Nature of Impact	Positive		
Nature of Impact	Positive		
Type of Impact	Direct Cumulative		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Likely	2	3
Duration	Long term	2	3
Extent	Area of Influence Development of the tourism potential of the Pit will affect the wider area of influence.	2	3
Receptor Sensitivity	Moderate	2	3
Magnitude	Moderate	2	3
Impact Significance	The backfill of the Pit has the potential to improve tourism opportunities in the area.	Minor 8 2	Moderate 13 3
Mitigating and Monitoring Requirements			
Required Management Measures	• Refurbish the Pit museum and gantry; • Appoint a museum curator and additional support staff to manage the Pit museum and the gantry; • Develop a Heritage Management Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein; • Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area; and • Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and skills applicable to the tourism industry.		
Required Monitoring (if any)	Track the number of visitors to the Pit and museum. Monitor the numbers of training programmes, participants, and pass rates.		

	Track employment and recruitment in the local tourism sector.
Responsibility for implementation	HR/Community Development Manager
Impact Finding	
Impact Finding	Impact can be enhanced through a Heritage Management Plan that focuses on developing the tourism potential of the Pit.

6.2 Social Impacts

6.2.1 Community development through the activities of the Itumeleng Community Trust (i.e. CDP commitments)

JD through the Itumeleng Trust, which was established in 2012, has assisted the communities of Jagersfontein, and Fauresmith, with a number of community projects that have primarily focused on improving education and health. In addition to these projects the ITC in 2019 established a computer center to assist Grade 8 to Grade 12 leaners with Mathematics and Science, and an After Day Care Center for thirty Grade 1 and Grade 2 learners.

Total spend on community, enterprise and social development programmes since 2012 amounts to R17,556,718.50.

Other community support is by way of assisting schools, the local municipality, and hospital/clinics with water provision, grading sports fields, and repairing electrical problems.

In addition to these activities JD assists the municipality with extinguishing fires, clearing refuse, repairing sewage pipes, and maintaining the public sewage works.

Total spend on water, sewage and electricity since 2012 amounts to more than R140 055 218.70.

Through the ITC the Tailings Operation has demonstrated a commitment to assist the schools, local municipality, and hospital/clinics in the area.

The positive impacts of the activities of the Trust are however compromised by negative community perceptions. The Trust is perceived not to be transparent or serve the interests of the community. As such it would be advisable for the Trust to improve stakeholder engagement and the involvement of community members through the Community Working Committee. This might also include undertaking a community needs analysis and developing a Community Development Plan to inform community development projects undertaken by JD.

Investment by JD in social infrastructure will greatly assist communities with improved living standards. It will however be important that all social investment initiatives focus on community needs and are implemented in a sustainable manner that do not lead to dependency on the Tailings Operation. This requires the involvement of the local government.

Management/Mitigation Measures

The activities to enhance community development might include:

- Engage with the Community Working Committee, and provide regular feedback on ICT initiatives;
- Undertake a community needs analysis to identify priority areas for community development that might include shifting the focus of the Trust from donations to more sustainable development

initiatives that lead to improved socio-economic conditions of the communities in Jagersfontein and Fauresmith. This analysis should include a review of Integrated Development Plans for improved service delivery in the Project Area;

- Prepare a Community Development Plan (CDP) in consultation with Local Government and the ITC Community Working Committee that outlines sustainable community initiatives based on the findings of the community needs analysis;
- Implement CDP programmes in partnership with the Local Government. This will improve JD's ability to handover community projects to the Municipality at project closure.
- JD may also consider, where feasible, donating project-related infrastructure to the Local Municipality and neighbouring communities. This should be addressed in a Closure Plan.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Investment by JD in community development projects that provide sustainable socio-economic benefits to communities in Jagersfontein and Fauresmith.		
Risk/ Impact	Community development through the activities of the ICT.		
Project Phase	Construction Operations		
Nature of Impact	Positive		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	3	4
Duration	Long Term If projects are sustainable there is likelihood that the impacts should continue beyond closure.	2	4
Extent	Area of Influence The impact of the ICT programmes will extend to the Project Area including the communities of Jagersfontein and Fauresmith.	3	3
Receptor Sensitivity	High	4	4
Magnitude	High	3	4
Impact Significance	Significant positive change will result from the development initiatives in an area currently characterised by poor infrastructure and service delivery.	Moderate 12 3	High 15 4
Mitigating and Monitoring Requirements			
Required Management Measures	• Engage with the Community Working Committee, and provide regular feedback on ICT initiatives; • Undertake a community needs analysis to identify priority areas for community development;		

	• Prepare a Community Development Plan (CDP) in consultation with Local Government and the ITC Community Working Committee; • Implement CDP programmes in partnership with the Local Government; and • Where feasible, donate project-related infrastructure to the Local Municipality and neighbouring communities.
Required Monitoring (if any)	Monitor CDP programmes and initiatives through a set of Key Performance Indicators (KPIs) that measure sustainability, and impacts of projects on livelihoods and living standards in the Project Area.
Responsibility for implementation	HR Manager/Community Development Manager
Impact Finding	
Impact Finding	Impacts can be enhanced by developing a CDP – in partnership with the Government and local communities – that aims to prioritise sustainable community development initiatives.

6.2.2 Social unrest and violent protests

There is a high risk that if the section 38 application is granted to JD that this would ignite community unrest and violent protests.

Overall community members are not in favour of the proposal by JD to backfill the Pit. In the public consultation meetings held at the Mayibuye Hall in Itumeleng on the 26th November 2019 and 2nd December 2021, community members expressed their concerns with backfilling the Pit destroying their heritage and any potential for tourism opportunities in the area. These sentiments were strongly echoed in the household survey where 72.46% of the households felt that the proposal by JD to backfill the Pit would negatively affect their households.

According to the communities in Jagersfontein the negative impacts of backfilling the Pit far outweigh the value of JD continuing its operations for another eight years in the area.

It is believed that these sentiments stem primarily from poor relations between JD and the neighbouring communities, and that if JD was perceived to be assisting communities in the area with community development that the communities might be in favour of the proposal to backfill the Pit.

Communities are of the opinion that backfilling the Pit only stands to benefit JD and not the local communities.

Management/Mitigation Measures

If awarded the Permit it would be advisable for JD to strive towards improving community perceptions of the Tailings Operation and the proposal by JD to backfill the Pit.

This would require a commitment by JD to backfill the Pit not only for the acquisition of a new FTSF, but also for the benefit of the communities in Jagersfontein. A commitment by JD to improve safety and eliminate associated safety risks by backfilling the Pit, would also need to be accompanied by a commitment by JD to improve tourism, social, and economic development in the area.

A commitment by JD to enhance community development through the backfilling of the Pit would assist JD with improving community relations and mitigating the potential for community unrest.

Some quick wins might include JD preparing a Community Development Plan ("CDP"), in consultation with elected community representatives, that aims to facilitate the implementation of sustainable community investments that seek to enhance social and economic development in the area. This might also include restructuring the Trust so that it functions more transparently, and as a development partner in the communities of Jagersfontein.

In addition, JD could demonstrate a willingness to promote tourism in the area by undertaking a tourism feasibility study, commissioning the refurbishment of the museum, and committing to allow the public to safely view the Pit.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Backfilling of the Jagersfontein Pit will lead to increased community tension and violent protests.		
Risk/ Impact	Social unrest and violent protests		
Project Phase	Construction Operations		
Nature of Impact	Negative		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	4	2
Duration	Long Term Impacts will only cease after the operation cease	3	3
Extent	Site The impact will be felt by communities neighbouring the operations	3	2
Receptor Sensitivity	Moderate	4	3
Magnitude	Moderate	-4	-3
Impact Significance	Given that a majority of the community members are not in support of the application for JD to use the Pit as a FTFS, the risk for social unrest is extremely high.	High 14 -4	Moderate 10 -3
Mitigating and Monitoring Requirements			
Required Management Measures	• Develop a Stakeholder Engagement Plan (SEP) that aims to assist JD with improving communication between the neighbouring communities and JD; • In consultation with local community representative develop a Community Development Plan (CDP), to determine sustainable economic development programmes that seek to enhance social and economic development in the area; • Consider efforts to restructure the Itumeleng Community Trust (ICT) so that it functions more transparently, and as a development partner in the		

	communities of Jagersfontein.
Required Monitoring (if any)	Monitor the number of meetings, and the number of participants attending meeting. Measure social and economic development impact of CDP and ICT programmes against a set of KPIs.
Responsibility for implementation	HR Manager/Community Development Manager
Impact Finding	
Impact Finding	Impact can be managed and mitigated through a SEP and CDP

6.2.3 Prevent damage to and the relocation of properties in close proximity to the Pit

As it currently stands the Pit is unstable, unsafe and breaking back at a rate of 1m per year. Within time, the increased rim of the Pit will affect property and structures within a 100m zone of influence. In the SRK Geotechnical Report (2012) it was suggested that residents housed in the 100m zone of influence would need to be relocated if the Pit is not backfilled (SRK, April, 2012).

A number of properties with in the 100m zone of influence are at risk of being relocated as a result of break back including the Blue Diamond Lodge, the Itumeleng Community Trust Offices, and Thusa Sechaba Crèche (Refer to Figure 6-1) detailing an estimate 100m zone of influence). If the Pit is backfilled it is likely that the properties within the 100m zone of influence will not need to be relocated.

Figure 6-1: Map of 100m zone of influence
(Source: Google Earth*)

Management/Mitigation Measures

Given that backfilling the Pit will stabilise the Pit, no further mitigation measures are required to prevent the relocation of properties within the 100m zone of influence.

Significance Rating

Impact Component	Impact	Significance prior to Mitigation	Significance with Mitigation
Activity	Backfilling the Pit will stablise the Pit, thereby preventing the relocation of properties within the 100m zone of influence		
Risk/ Impact	Prevent damage to and the relocation of properties in close proximity to the Pit		
Project Phase	Construction Operation Closure		
Nature of Impact	Positive		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	4	
Duration	Permanent Long term, beyond project closure	4	
Extent	Localised The impact is localised to properties with in a 100m zone of influence of	1	
Receptor Sensitivity	High	4	
Magnitude	High	4	
Impact Significance	By backfilling the Pit, the proposed project with prevent structures from having to be relocated due to safety. risks.	High 13 4	
Mitigating and Monitoring Requirements			
Required Management Measures	• Not applicable		
Required Monitoring (if any)	Prior to back filling the Pit, monitor vibrations and break back on properties in close proximity to the Pit.		
Responsibility for implementation	Environmental Manager		
Impact Finding			
Impact Finding	Backfilling the Pit will prevent relocating properties within a 100m zone of influence. No impact enhancement measures are required other than backfilling the Pit.		

6.2.4 Improved community identity and a sense of wellbeing

The proposal to backfill the Pit, and to refurbish the museum and the gantry, has the potential to uplift the social wellbeing of heavily burdened communities with little hope for the future. During discussions with

community leaders and community members, a deep sense of community pride was expressed when speaking about the Pit and the old heritage buildings in Jagersfontein. For a majority of community members the Pit is a community asset with enormous historical value and tourism potential. It symbolises hope and the potential for economic development in the area.

Although backfilling the Pit would destroy the current visual depth of the Pit, the backfilling of the Pit would also stabilise the Pit thereby reducing the safety risks associated with breakback. By stabilising the Pit, the proposed Project will improve safety and enable opportunities for visitors and tourists to view the Pit.

Regaining access to the Pit will also assist with improving the overall sense of wellbeing of the communities in the area. Knowing that their historical asset will be appreciated, and used to assist with economic upliftment and tourism in the area, will assist with improving the overall moral and identity of the communities in Jagersfontein.

In addition, refurbishing the museum and the gantry will improve the community's sense of pride and give them a renewed hope in the future.

Management/Mitigation Measures

In order to enhance the impact that rehabilitating the Pit would have on the sense of wellbeing of the communities in the area it is suggested that JD:

- Refurbish the museum and the gantry, and invite the communities of Jagersfontein and Fauresmith to a reopening ceremony inaugurated by the Mayor of Jagersfontein;
- Provide transport for students at the various schools in the area, and possibly even in the Region, with guided tours to the museum and the Pit;
- Develop a campaign to market the Pit. This might include advertising the Pit in newspapers, on local radios, and in tourism brochures and pamphlets; and
- Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and skills applicable to the tourism industry.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Backfilling of the Pit, museum and gantry have the potential to improve the overall sense of wellbeing of the communities in the area		
Risk/ Impact	Improved community identity and a sense of wellbeing		
Project Phase	Operations		
Nature of Impact	Positive		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Likely	3	3
Duration	Long term	2	3
Extent	Area of Influence	2	3

	The impact of influx will affect the wider area of influence.		
Receptor Sensitivity	Moderate	2	3
Magnitude	High	2	4
Impact Significance	Rehabilitating the Pit has the potential to dramatically improve the identity and sense of wellbeing of communities in the Project Area.	Minor 9 2	Moderate 12 4
Mitigating and Monitoring Requirements			
Required Management Measures	• Refurbish the museum and the gantry, and invite the communities of Jagersfontein and Fauresmith to a reopening ceremony inaugurated by the Mayor of Jagersfontein; • Provide transport for students at the various schools in the area, and possibly even in the Region, with guided tours to the museum and the Pit; • Develop a campaign to market the Pit. This might include advertising the Pit in newspapers, on local radios, and in tourism brochures and pamphlets; and • Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and skills applicable to the tourism industry.		
Required Monitoring (if any)	Track the number of visitors to the Pit and museum. Monitor the numbers of training programmes, participants and pass rates. Track tourism sector development including the number of restaurants, guest houses etc.		
Responsibility for implementation	HR Manager		
Impact Finding			
Impact Finding	Through a number of practical enhancement measures the Project has the potential to improve the overall sense of wellbeing of the communities in the Project Area.		

6.3 Health and safety impacts

6.3.1 Increased community safety and the elimination of vibration and breakback risks

As it currently stands the Pit is unstable, unsafe and closed for public viewing. To prevent injuries and potential fatalities, JD closed the gantry, and fenced Portion 15 of the Farm Jagersfontein 15IS.

In 2012 a geo-technical report compiled by Dr. Graham Howell and Mr. Adriaan Meintjies, Principal Engineers at SRK Consulting, it was suggested that backfilling the Pit will stabilise the Pit thereby reducing associated risks of break back and vibrations.

The Pit however is a massive hole in the ground covering a huge surface area of 19.635ha, and as such the Pit will always pose a potential safety risk to community members and livestock.

Efforts to ensure long term solutions to safety that extend beyond the Life of Operation will need to be considered and detailed in a Closure Plan.

Management/Mitigation Measures

Mitigation measures that aim to increase community safety might include:

- Developing a Closure Plan in consultation with Local Government, and community representatives, that considers sustainable ways to ensure the safety of community members and livestock post closure;
- Maintaining the perimeter fence around the Pit to minimise injuries and fatalities;
- Monitoring and managing access to the Pit museum and gantry infrastructure;
- Restricting public access to other sections of the Pit and project related infrastructure; and
- Developing a procedure to address trespassing, and livestock grazing in restricted areas.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Backfilling the Pit will eliminate the safety risks associated with break back and vibrations.		
Risk/ Impact	Improved community safety and the elimination of vibration and break back risks.		
Project Phase	Operation Closure		
Nature of Impact	Positive		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	2	4
Duration	Long Term Impacts can be mitigated and reduced	2	3
Extent	Site Impacts will be confined to site	2	2
Receptor Sensitivity	High	2	4
Magnitude	High	3	4
Impact Significance	Safety risks are a concern given the current instability of the Pit. Backfilling the Pit will eliminate a number of safety risks associated with break back of the rim of the Pit.	Moderate 8 3	High 13 4
Mitigating and Monitoring Requirements			
Required Management Measures	• Develop a Closure Plan in consultation with Local Government, and community representatives, that considers sustainable ways to ensure the safety of community members and livestock post closure; • Maintain the perimeter fence around the Pit to minimise injuries and fatalities; • Monitor and manage access to the Pit museum and gantry infrastructure;		

	• Restrict public access to other sections of the Pit and project related infrastructure; and • Develop a procedure to address trespassing, and livestock grazing, in restricted areas.
Required Monitoring (if any)	Regular monitoring of the perimeter fence
Responsibility for implementation	HR/Health and Safety Manager
Impact Finding	
Impact Finding	Safety risks can be enhanced through a number of interventions that could further assist with preventing injuries and fatalities.

6.3.2 Loss of the expansive visual depth of the Pit

The Pit has a surface area of 19.635ha, and when measured from the Pit's surface, it has a visual depth of 236m to the exposed bottom layer ("EBL").

Given that the Backfill Material will fill the Pit to a level some 60m below the rim, the proposed project will negatively affect the appearance of the Pit by reducing the visual depth of the Pit from 236m to 60m.

Management/Mitigation Measures

This impact cannot be mitigated, and it will be permanent. As such, no mitigation measures are recommended for this impact.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Backfilling the Pit will permanently change the visual appearance of the Pit		
Risk/ Impact	Loss of expansive visual depth of the Pit		
Project Phase	Operation Closure		
Nature of Impact	Negative		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	4	
Duration	Permanent Impacts will be long term and extend beyond project closure	4	
Extent	Site Impacts are site specific	2	
Receptor Sensitivity	Moderate	4	
Magnitude	Moderate	-4	
Impact Significance	This impact cannot be mitigated and is permanent.	High 14 -4	

Mitigating and Monitoring Requirements	
Required Management Measures	• Not applicable
Required Monitoring (if any)	None
Responsibility for implementation	None
Impact Finding	
Impact Finding	The potential loss of the Pit's expansive depth is significant, and all efforts should be made to sensitise and prepare communities for this loss.

6.3.3 Noise and air quality impacts

Given that pipelines will be installed, and no construction activities will occur, it is expected that dust levels will not increase.

Dust can have adverse impacts on the health of the communities, and also pose a nuisance factor by entering homes, settling on houses, clean washing, painted surfaces and roofs etc.

Management/Mitigation Measures

Dust emissions should be managed and mitigated through the measures detailed in an Air Quality Management Plan. This should include regular monitoring of dust levels and dust suppression techniques. Furthermore, a grievance management mechanism should be in place to receive dust related complaints.

To mitigate noise levels, the following management measures should be implemented:

- Keep noise levels to recommended industrial standards;
- Implement a grievance procedure to address noise related complaints; and
- Restrict noisy activities to standard working hours.

Noise and dust will be minimised with project closure.

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	During construction activities such as haulage and the operation of earth moving equipment will increase sound/noise and dust levels. Limited noise and dust pollution is expected during the operational phase.		
Risk/ Impact	Noise and air quality impacts		
Project Phase	CO, OP		
Nature of Impact	Negative		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Likely	4	3

Duration	Short term Impacts can be mitigated and reduced	3	2
Extent	Site Impacts will be confined to site	3	2
Receptor Sensitivity	Moderate	4	3
Magnitude	Moderate	4	3
Likelihood/ probability	Possible	3	2
Duration	Long Term Impacts will only cease after the operational life of the Tailings Operation.	3	2
Extent	Site The impact is felt by communities neighbouring the proposed Tailings Operation.	2	2
Receptor Sensitivity	Moderate Low	3	2
Magnitude	Minor	-3	-2
Impact Significance	Noise and dust impacts will be moderate, if not managed.	Moderate 11 -3	Minor 8 -2
Mitigating and Monitoring Requirements			
Required Management Measures	• Dust emissions will be managed by an Air Quality Management Plan; • Noise levels will be kept to recommended industrial standards; • A grievance management mechanism will be in place to receive and address dust and noise related complaints outlines in a Stakeholder Engagement plan (SEP); • Restrict noisy activities to standard working hours; and • Noise and dust impacts will be minimised with project closure, and addressed in the Closure Plan.		
Required Monitoring (if any)	• Management and monitoring measures will be detailed in an Air Quality Management Plan. • Monitor grievances including number of registered grievances, and resolved cases.		
Responsibility for implementation	Environmental Manager and HR Manager		
Impact Finding			
Impact Finding	Noise and dust impacts will be moderate, if appropriately monitored and managed.		

6.4 Cultural heritage impacts

6.4.1 Loss of the heritage value of the Pit

Many community members feel strongly that backfilling the Pit will destroy its heritage value.

Even though the proposed project will affect the visual appearance and the heritage value of the Pit, it might not necessarily destroy the tourism potential of the Pit (refer to impact 6.1.6).

Given that communities in the area feel so strongly against the proposal to backfill the Pit, if JD is awarded the Permit, this could potentially give rise to social unrest and violent protests. The risk of social unrest can however be mitigated if JD commits to protecting and promoting the tourism value of the Pit.

Although the impact of the proposed project on the heritage value of the Pit is a significant impact, developing the tourism value of the Pit could potentially serve as an offset and mitigation measure.

Management/Mitigation Measures

In order to reduce the impact of backfilling on the heritage value of the Pit, JD should look at offsetting this impact by promoting the tourism value of the Pit (refer to impact 6.1.6).

Significance Rating

Impact Component	**Impact**	**Significance prior to Mitigation**	**Significance with Mitigation**
Activity	Backfilling the Pit might result in a potential loss of the heritage value to the Pit.		
Risk/ Impact	Potential loss of the heritage value of the Pit.		
Project Phase	Operation Closure		
Nature of Impact	Negative		
Type of Impact	Direct		
	Define Significance Categories	Significance Prior to Mitigation	Significance With Mitigation
Likelihood/ probability	Definite Likelihood	4	3
Duration	Permanent Impacts will be long term and extend beyond project closure	3	2
Extent	Site Impacts are site specific	2	2
Receptor Sensitivity	Moderate	4	3
Magnitude	Moderate	-4	-3
Impact Significance	This impact cannot be reversed, and efforts should be made to offset this impact by promoting the tourism value of the Pit.	High 13 -4	Moderate 10 -3
Mitigating and Monitoring Requirements			
Required Management Measures	• Develop a Heritage Manage Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein; and • Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area.		
Required Monitoring (if any)	Track the number of visitors to the Pit and museum.		
Responsibility for implementation	HR/Community Development Manager		

Impact Finding	
Impact Finding	The potential loss of the Pit's heritage value is significant, and possibly through promoting it's tourism value, this impact can be minimised and managed.

7. Social Management Plan

7.1 Introduction

JD has developed, or is in the process of developing, a series of management standards and plans for social impact mitigation, this includes environmental management plans like the Integrated Waste and Water Management Plan (October, 2019).

These management plans and policies are informed by the local context and will be developed in consultation with key stakeholders including Local Government.

Management plans include:

- Heritage Management Plan (in progress);
- Integrated Waste and Water Management Plan (2019);
- Air Quality Management Plan (2019);
- Stakeholder Engagement Plan and Grievance Procedure (in progress);
- Human Resources Policies and Procedures (2012);
- Community Development Plan (in progress); and
- Closure Plan (in progress).

Management plans are living documents, which may be continually updated throughout the life of the Tailings Operation.

This section provides a summary of the relevant management plans informing the overarching SMP (refer to Table 7-1).

7.2 Management Plans

The following management plans informing socio-economic impact mitigation during the life of the operation are integrated and work in partnership to mitigate and manage potential social impacts:

7.2.1 Heritage Management Plan

At the time of compiling this assessment, a Heritage Impact Assessment (HIA) was also being compiled to identify heritage impacts associated with the backfilling of the Pit. The HIA (2022) is now complete and will inform JD's Heritage Management Plan.

7.2.1.1 Objectives

The objectives of the HIA (2022) included:

- Establishing the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the affected project area, which in this case, incudes the Jagersfontein Pit;
- Determining the nature, the extent and the heritage impact of backfilling and rehabilitating the Jagersfontein Pit; and
- Evaluating appropriate mitigation measures to be taken, if any, to mitigate and manage the heritage resource.

7.2.1.2 Impact Mitigation Measures

The HIA identified mitigation measures to manage the impact of the proposed project on the heritage value of the Jagersfontein Pit.

7.2.2 Integrated Waste and Water Management Plan

Water and waste will be managed through an Integrated Waste and Water Management Plan (October 2019) prepared by Turn 180 consultants as part of JD's IWULA process. The IWWMP is informed by JD's Environmental Management Plan (EMP), and takes into consideration the requirements and guidelines of the backfilling method proposed by SRK (2019).

7.2.2.1 Objectives

The Integrated Waste and Water Management Plan (October, 2019) aims to efficiently manage and monitor waste, stormwater, surface water, and ground water during the backfilling process.

The main objective of the management plan is to prevent and/or limit any potential impacts from waste generation, storage and management through the implementation of appropriate waste management measures, in accordance with JD's EMP and the applicable legislative requirements.

7.2.2.2 Impact Mitigation Measures

Waste management measures include the following:

- Characterisation of the waste;
- Separation of waste into the different waste streams;
- Reuse of waste where possible; and

- Recycling of recyclable waste (e.g. scrap metal, old oil, etc.).

Stormwater management measures include the following:

- Diversion berms and trenches, are implemented on all operational areas, in order to separate clean- and dirty storm water;
- Berms will be built around the Pit, on the north-eastern to the north-western side, to stop the natural flow off clean surface runoff entering the pit and effectively to divert the stormwater around it. This water originates from the North Dam catchment area, near the Fauresmith road tailings area, and flows naturally towards the Pit.
- Before any backfilling occurs, the North Dam's walls need to be upgraded to contain this water and create an overflow away from the Pit, which will subsequently have to drain into the Loskop Dam.

The main objectives of groundwater management during the operational phase at the Tailings Operations and backfilling the Pit are as follow:

- Contain pollution as far as is practically possible;
- Do not abstract water exceeding the safe yield of groundwater resources;
- Implement the SRK design during the Pit's backfilling and follow the requirements and guidelines of the method proposed;
- Conduct regular monitoring of the groundwater in both the shallow and deep aquifer;
- Reduce groundwater contamination caused by the seepage of water from FTSF;
- Minimize the spillages of water in the Plant during the processing of tailings; and
- Implement continued groundwater monitoring in accordance with the operations water monitoring programme.

Some of the surface water management measures include:

- Monitored for water quality, to determine if the backfilling of the Pit causes contamination of the lower aquifer through the deposition of fine tailings. The shaft is already part of the Surface and Groundwater Monitoring Programme, which is monitored quarterly.
- Samples of all the surface water resources are taken on a quarterly basis, analysed in a laboratory for the chemical and microbiological elements and then compiled into a report, which is sent to Department of Human Settlements, Water and Sanitation (DHSWS).

For further information on the proposed mitigation measures refer to the IWMMP (October, 2019).

7.2.3 Air Quality Management Plan

Although dust emissions from the proposal to backfill the Jagersfontein Pit are expected to be low, an Air Quality Management Plan is required to quantify the extent of the impact, and to identify mitigation measures.

JD is still in the process of formulating this management plan, which will be informed by JD's EMP, and its current dust control and suppression procedures that includes dust sampling.

7.2.4 Stakeholder Engagement Plan and Grievance Procedure

JD is required to prepare a Stakeholder Engagement Plan (SEP) for the proposed backfilling of the Jagersfontein Pit.

7.2.5 Objectives

The SEP aims to outline JD's consultation engagement strategy, which will assist JD with managing and facilitating engagement through the various stages of the Project's life cycle from construction, to operations, and closure.

In general the communities neighbouring the proposed Project Area, distrust JD, and even though JD established the ITC in 2012, the Trust is perceived not to serve the interests of the communities in the area.

As an alternative to only communicating to neighbouring communities through the ITC, JD should also consider disseminating project information to community through notice boards, a monthly newsletter, and possibly, quarterly community meetings. Information dissemination might include details on employment figures, recruitment procedures, and water usage and management. This will improve trust and transparency between JD and the neighbouring communities, and assist with JD gaining support for the backfilling of the Pit, and other related project activities.

As such, the overarching objectives of the SEP should be to:

- Understand the stakeholder engagement requirements of the proposed project;
- Provide guidance for stakeholder engagement such that it meets the standards of International Best Practice;
- Identify key stakeholders that are affected, and/or able to influence the Project and its activities;
- Identify the most effective methods and structures through which to disseminate project information, and to ensure regular, accessible, transparent and appropriate consultation;
- Guide JD to build mutually respectful, beneficial and lasting relationships with stakeholders; and
- Outline a grievance procedure allowing stakeholders to log their concerns, and a procedure to address these concerns.

The SEP, in conjunction with other management plans, will assist JD with addressing many of the impacts identified by the SEIA.

7.2.5.1 Impact Mitigation Measures

Grievance Mechanism

As part of the SEP, JD is required to prepare a grievance procedure and a management system to address grievances associated with the backfilling of the Pit.

Currently there is no grievance procedure in place.

Grievances associated with the proposed project should be recorded and addressed. The grievance procedure should outline a feedback process to claimants that includes a schedule for mitigation and an appeal process.

Community Meetings

Since 2012 JD has consulted with a number of stakeholders and community leaders of neighbouring communities. Very few meetings have been held with community members.

In order to facilitate engagement, build and maintain relationships with community members, JD should meet regularly with community members.

Community meeting should be held ever quarter, and provide community members with updates on JD related activities including local employment. At these meetings community members should be provided with an opportunity to raise their grievances and concerns, and JD should provide feedback on grievances and concerns raised at earlier meetings.

On-going Engagement Strategy

If the proposed application is approved, JD should identify community engagement activities that break away from JD's current consultation strategy that focuses primarily on engaging with community leaders.

Broader consultation and engagement activities will assist JD with reducing tension between community leaders and community members. It will also assist JD with building trust, informing and educating community members about project related activities, including employment and community development programmes, thereby managing high expectations, and reducing the risk of social unrest.

7.2.6 Human Resources Policies and Procedures

Recruitment and employment at the Tailings Operation is managed through a number of Human Resources policies and procedures that promote employment equity, health and safety in the workplace.

7.2.7 Community Development Plan

A Community Development Plan (CDP) should aim to promote and support sustainable development programmes in communities affected by the proposed backfilling of the Jagersfontein Pit.

Its key objective will be to enhance project-related benefits while contributing to the management and mitigation of potential risks to and adverse impacts on surrounding communities. Through the CDP, JD will implement meaningful Corporate Social Investment (CSI) through effective engagement with local stakeholders.

7.2.7.1 Objectives

The overarching objective of the CDP will be to establish a durable and locally appropriate framework and model for sustained and co-operative socio-economic development in the communities of Jagersfontein, and Fauresmith.

This management plan should aim to guide the activities and programmes of the ICT.

The design and implementation of a viable and sustainable CDP that is likely to realise this objective requires care and commitment. This is particularly the case in an area where government institutions are under resourced, and where the communities neighbouring an operation are vulnerable. In this context, the CDP has to ensure and retain the participation and ownership of all stakeholders. This requires thorough consultation, confidence building, cooperative planning and inclusive decision-making.

The principles of the CDP should include:

- The promotion of sustainable community development programmes, which appropriately balance present development needs and priorities, with resources needed to ensure continued development for future generations;
- The promotion of self-sufficiency among organisations and structures planning and facilitating development, and the avoidance of paternalistic and other practices that will promote project dependency;
- Wide and continuing consultation and engagement with representative and development-oriented organisations and agencies;
- Respect for social and cultural diversity;
- Communication processes ensuring equitable participation, particularly amongst vulnerable groups that may be marginalised;
- Equitable access by all groups to development initiatives promoted under the CDP;
- Optimum effectiveness of development support, through participative project screening and prioritisation, focused implementation and regular monitoring. Attention should be given to initiatives where limited resources can “leverage” significant development results; and
- Upholding best practice in the context of corporate citizenship, and forming working alliances with like-minded companies and organisations.

7.2.7.2 Impact Mitigation Measures

Although the Life of Operation is relatively short term, the Tailings Operation through the ICT has the potential to contribute to the economic development of the area by providing the opportunity for substantial and permanent improvements to communities.

By developing a CDP in consultation with key project stakeholders the following issues and impacts will be addressed:

- Governance and capacity building: capacity building for good governance aims to raise the capacity of local organisations and institutions. This means strengthening the ability and effectiveness of local institutions in addressing development and service delivery needs by assisting partners with accountability, organisational structures, planning, financing and reporting;
- Infrastructure refurbishment and development: refurbishing and building health and education infrastructure i.e. refurbishing schools and building clinics that provide developmental benefits at marginal costs and without creating high levels of dependency;
- Macro-projects: benefiting large community groups through agricultural, solar power, and water supply projects;
- Local procurement: outsourcing to the local economy can play a major role in uplifting neighbouring communities, alleviating poverty, increasing food security and developing local businesses;
- Job creation, skills development and enterprise development: including local employment, training and support for both employees and entrepreneurs;
- Community health and wellbeing: including STD and HIV/AIDS awareness and prevention programmes and primary health care; and
- Empowerment of vulnerable groups: Providing support to marginalised and disempowered people who lack access to social support networks. These people often include widows, orphans, youth, the elderly and the disabled or chronically ill.

7.2.8 Closure Plan

If the proposal to backfill the Jagersfontein Pit is approved JD is required to prepare a Closure Plan that addresses the social impacts associated with JDs closure. This management plan would need to consider measures and mechanisms to reduce and mitigate the impact caused from job losses.

In addition the Closure Plan should address the following:

- Inform the public, regulatory Authorities and all stakeholders about the closure of the Tailing Operation;
- Consider the beneficial use of projects assets to be left behind and/or handed over to the Local Municipality;
- Minimise, reduce and eliminate long-term environmental impacts;
- Assist the Municipality with developing a procedure to ensure the protection of public health and safety during and after closure of the Tailings Operation and associated facilities;
- Where feasible, rehabilitate disturbed land to a productive condition;
- Encourage progressive closure activities to commence before the Tailings Operation ceases;
- Inform the stakeholders about planned measures in case of temporary suspension and pre-mature closure; and
- Budget and schedule closure planning activities, such as the costing of financial provisions for closure as part of the annual reporting procedures.

7.3 Organogram

These management plans will be implemented by JD personnel responsible for HR related issues, stakeholder consultation and community development.

This social management plan will be integrated into JD's routine operations through their environmental management system and standard operating procedures. As required with all environmental and social impact mitigation and management, all levels of management and the workforce will be required to commit to the social management plan.

Table 7-1: Socio-Economic Impact and Mitigation Summary Table

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
ECONOMIC IMPACTS						
Job creation and increased employment opportunities	Moderate 12 3	High 13 4	• Draw on local skills registers and employee databases to employ local workers if qualified applicants with the appropriate skills are available. • Formalise local employment procedures by developing a recruitment policy. • Ensure Contractors' Agreements make provision for contractors to hire locals if the skills are available. • Work with community representatives to develop open and transparent recruitment procedures that are disclosed to community members. • Use various mechanisms to advertise job opportunities in local communities. • Continue to provide skills development training for local people through internships, scholarships, and/or vocational and skills training programmes.	Recruitment policies and procedures	• HR Manager	Prefeasibility On-going
Improved skills development and training	Moderate 10 3	High 13 4	• Undertake a skills analysis to determine the level of skills in the community, and identify semi-skilled community members. • Assist skilled community members with acquiring certificates and qualifications for formal employment. • Develop and implement skills development and training programmes that target both employees and the broader local population including Jagersfontein, Itumeleng, Charlesville and Fuaresmith. • Continue to provide and facilitate the training of local people through internships, scholarships, and/or vocational and skills	Community Development Plan	• An Economist can undertake a skills analysis • Community Relations Manager	On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			training programmes.			
Contribution to Government revenue and the fiscals of Local Municipalities	High 13 4		• JD will not be able to influence Government spending from these earnings, nor will it be able to stipulate conditions for payment. As such, no mitigation measures are recommended for this impact.			
Tensions over limited employment opportunities and procurement contracts	High 13 -4	Moderate 10 -3	• Work with community representatives to prepare a open and transparent recruitment process that is widely disclosed to community members; • Prioritise employment of local community members within the Project Area; • Provide employment options that allow a range of people to benefit from employment opportunities, where possible (e.g., non-shift or part-time work); • Ensure contractors hire local community members; • Use various mechanisms to advertise employment opportunities in neighbouring communities; • Maintain recruitment and employment records, distributing short-term opportunities to as many community members as possible; and • Regularly provide feedback to communities including disclosing any updates to employment figures.	Recruitment policies and procedures	• HR Manager	Prefeasibility On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
Development of the tourism potential of the Pit	Minor 8 2	Moderate 13 3	• Refurbish the Pit museum and gantry. • Appoint a museum curator and additional support staff to manage the Pit museum and the gantry. • Develop a Heritage Management Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein. • Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area. • Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and skills applicable to the tourism industry.	Heritage Management Plan Community Development Plan Stakeholder Engagement Plan	• Tourism/Cultural Heritage Specialist • Community Relations Manager	Prefeasibility On-going
Community development through the activities of the Itumeleng Community Trust	Moderate 12 3	High 15 4	• Engage with the Community Working Committee, and provide regular feedback on ICT initiatives. • Undertake a community needs analysis to identify priority areas for community development. • Prepare a Community Development Plan (CDP) in consultation with Local Government and the ITC Community Working Committee. • Implement CDP programmes in partnership with the Local Government. • Where feasible, donate project-related infrastructure to the Local Municipality and neighbouring communities.	Community Development Plan Stakeholder Engagement Plan	• Community Relations Manager	On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
Social unrest and violent protests	High 14 -4	Moderate 10 -3	• Develop a Stakeholder Engagement Plan (SEP) that aims to assist JD with improving communication between the neighbouring communities and JD; • In consultation with local community representative develop a Community Development Plan (CDP), to determine sustainable economic development programmes that seek to enhance social and economic development in the area; • Consider efforts to restructure the Itumeleng Community Trust (ICT) so that it functions more transparently, and as a development partner in the communities of Jagersfontein.	Stakeholder Engagement Plan Community Development Plan	• Operations Manager • HR Manager • Community Relations Manager • Security Manager	On-going
Prevent damage to and the relocation of properties in close proximity to the Pit	High 13 4		• Prior to backfilling of the Pit, monitor vibrations and break back impacts on properties in close proximity to the Pit. • No further mitigation measures are required to prevent the relocation of properties within the 100m zone of influence.	Grievance Procedure	• Community Relations Manager	Pre-feasibility
Improved community identity and a sense of wellbeing	Minor 9 2	Moderate 12 4	• Refurbish the museum and the gantry, and invite the communities of Jagersfontein and Fauresmith to a reopening ceremony inaugurated by the Mayor of Jagersfontein. • Provide transport for students at the various schools in the area, and possibly even in the Region, with guided tours to the museum and the Pit. • Develop a campaign to market the Pit. This might include advertising the Pit in newspapers, on local radios, and in tourism brochures and pamphlets. • Continue to train local people through internships, scholarships, and/or vocational and skills training programmes in courses and	Heritage Management Plan Community Development Plan	• HR Manager • Community Relations Manager • Tourism/Cultural Heritage specialist	Pre-feasibility On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			skills applicable to the tourism industry.			
Improved community safety and the elimination of vibration and break back risks	Moderate 8 3	High 13 4	• Develop a Closure Plan in consultation with Local Government, and community representatives, that considers sustainable ways to ensure the safety of community members and livestock post closure. • Maintain the perimeter fence around the Pit to minimise injuries and fatalities. • Monitor and manage assess to the Pit museum and gantry infrastructure. • Restrict public access to other sections of the Pit and project related infrastructure. • Develop a procedure to address trespassing, and livestock grazing, in restricted areas.	Security and Safety Plan (i.e. Community Health and Safety Plan) Closure Plan	• Operations Manager • Security Manager	On-going
Loss of expansive visual depth of the Pit	High 14 -4		• This impact cannot be mitigated and is permanent.			
Noise and air quality impacts	Moderate 11 -3	Minor 8 -2	• Dust emissions will be managed by an Air Quality Management Plan. • Noise levels will be kept to recommended industrial standards. • A grievance management mechanism will be in place to receive and address dust and	Air Quality Management Plan Closure Plan	• Environmental Office	On-going

Impact	Rating before mitigation	Rating After Mitigation	Mitigation Measures	Management Plan	Resources	Timing
			noise related complaints. • Restrict noisy activities to standard working hours. • Noise and dust impacts will be minimised with project closure, and addressed in the Closure Plan.			
Loss of the heritage value of the Pit	High 13 -4	Moderate 10 -3	• Develop a Heritage Manage Plan to create and enhance the tourism potential of the Pit and the Town of Jagersfontein. • Consult with local municipalities, the Department of Tourism, and the South African Heritage Resource Agency to assist with promoting tourism in the area.	Heritage Management Plan	• Tourism/Cultural Heritage specialist • Community Relations Manager	Pre-feasibility On-going

8. Conclusion

Socio-economic impacts were identified through two processes namely; public consultation meetings and a socio-economic baseline study that included; a household survey comprising 69 households, and a number of key informant interviews.

This report details the socio-economic environment of the Jagersfontein communities. It outlines the concerns raised by community members, and presents the identified socio-economic impacts and mitigation measures associated with the proposal by JD to backfill the Jagersfontein Pit.

In the identification, rating and mitigation of impacts, impacts were grouped according to the following impacts:

- Economic;
- Social;
- Safety and health; and
- Cultural and heritage.

Each impact grouping was assessed against the socio-economic baseline data and the proposed project description, and included mitigation measures to reduce and manage negative impacts, and to enhance potential positive impacts.

Overall, none of the potential socio-economic impacts identified during the socio-economic impact assessment warrant the Project not proceeding.

However, given that the communities neighbouring the Project are not in favour of JD's proposal to backfill the Pit, from a socio-economic point of view, the greatest social risk to the Project proceeding is the potential impact of social unrest and violent protests.

If JD commits to improving community stakeholder engagement, and aims to enhance community development through the backfilling of the Pit, there is no reason – from a socio-economic impact assessment point of view – why the proposed Project should not proceed. This would require JD implementing the mitigation and management measures recommended in this report alongside the following management plans:

- Heritage Management Plan;
- Integrated Waste and Water Management Plan;
- Air Quality Management Plan;
- Stakeholder Engagement Plan and Grievance Procedure;
- Human Resources Policies and Procedures;
- Community Development Plan; and
- Closure Plan.

Should the section 38 application be granted by SAHRA to JD to backfill the Jagersfontein Pit, this report will assist JD with monitoring and managing potential future project impacts.

Appendix 1
Curriculum Vitae

TANDI KOLBE MA Sociology

SOCIAL SPECIALIST, DATA AND SURVEY SPECIALIST
Position: Surveya, Director and Principal Consultant
Email: Tandi.Kolbe@surveya.co.za
Web address: www.surveya.co.za

SUMMARY

Tandi Kolbe is a social development consultant with more than 14 years' experience in undertaking Social Impact Assessments, and developing Social Management Plans for the mining industry. Tandi has worked on various mining projects throughout Africa, and in particular South Africa, undertaking socio-economic surveys, engaging with key stakeholders, facilitating public consultation meetings, and assisting mines with social management plans, information systems and procedures to manage social risks and project impacts.

Over the past 13 years Tandi has developed and launched two mobile applications for automated data collection and analysis. She works closely with technology developers to inform survey design, and her company Surveya, specialises in providing bespoke end-to-reporting survey solutions primarily for the mining sector in South Africa.

PROFESSIONAL QUALIFICATIONS/REGISTRATION(S)

International Association of Impact Assessments South Africa (IAIAsa)

EDUCATION

School, college and/or University Attended	Degree/certificate or other specialized education obtained	Date Obtained
University of Cape Town	Data Analytics	2021
University of Stellenbosh	Women in Leadership	2021
University of Witwatersrand	MA (Sociology)	2009
University of Witwatersrand	BA (Hons) (Sociology)	2006
University of Witwatersrand	BA (Economic Studies, International Relations and Sociology), University of the Witwatersrand	2004

LANGUAGES

Language	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent

COUNTRIES WITH WORK EXPERIENCE

Burkina Faso
Democratic Republic of the Congo
Kenya
Lesotho
Liberia
Madagascar
Mali
Mozambique
Senegal
Sierra Leone
South Africa
Swaziland
Uganda
Zambia
Zimbabwe

EMPLOYMENT HISTORY

Dates of employment	Position held	Company
2010 – to present	Director and Principal Consultant	Surveya (www.surveya.co.za)
2010 - 2020	Principal Consultant	SES Consulting
2007 - 2010	Social Consultant	SRK Consulting
2008	Part-time Junior Sociology Lecturer	University of Witwatersrand, Sociology Department
2005 - 2006	Junior Researcher and Project Administrator	University of Witwatersrand, Sociology Department

PROJECT EXPERIENCE (2011 – 2022)

Survey Specialist: Data management, analysis and reporting

Green Cape, Climate Change Monitoring and Evaluation for EU funded Project, *Western Cape, Eastern Cape, Northern Cape*, South Africa, 2022
Anglo American, Office Relocation Surveys, 2020 – to present
Anglo American Corporate Office, Anglo American Remote Working Employee Surveys, Gauteng, *South Africa*, 2020 – to present
Actuate, Anglo American Repurpose Project, *South Africa*, 2021
World Bank Group, National Trade Facilitation Survey*, South Africa*, 2021
Openroom Consulting, Pulse Check Employee Engagement Survey, *Western Cape*, South Africa*, 2021*
Momentum, Freethinking Momentum Consulting Advisory Survey, *Gauteng*, South Africa , 2020
Anglo American Corporate Office, Anglo American Workspace Employee Survey, *Gauteng*, South Africa, 2019
Kumba Iron Ore, Livelihood Monitoring Survey, *Northern Cape*, South Africa, 2017 – 2019
Kumba Iron Ore, Dingleton Resettlement Project, *Northern Cape*, South Africa, 2014 – 2017
SRK Consulting, Falea Project, Mali, 2014
SRK Consulting, NYA Cement Plant, *Democratic Republic of the Congo*, 2013
Synergy Global, Kalanga Infrastructure Services Project, *Uganda*, 2013
SRK Consulting, Sadiola Environmental and Social Impact Assessment Project, Mali, 2012

Nomad Consulting, Kenmare Resources, Mozambique, 2012
SRK Consulting, Naboom Chrome Project, *Limpopo*, South Africa, 2011
Nomad Consulting, Base Titanium Limited Resettlement Action Plan, Kenya, 2011

Resettlement Specialist: Resettlement planning and management

Interwaste Séshé Environmental, Interwaste Klinkerstene Resettlement Prefeasibility Study, *Mpumalanga*, South Africa, 2020
Kumba Iron Ore, Dingleton Resettlement Project, *Northern Cape*, South Africa, 2014 – 2017
Kriel Colliery, Thubelihle Resettlement Project, *Mpumalanga*, South Africa, 2011 – 2014
SRK Consulting, Richard's Bay Minerals Influx Management Plan, *KwaZulu Natal*, South Africa, 2011
SRK Consulting, Resettlement Prefeasibility Report Paarl Wine Farm, *Western Cape*, South Africa, 2011

Social Specialist: Socio-economic Impact Assessments and stakeholder engagement

JEMS Environmental Consulting, Northam Eland Platinum Mine SEIA, *North-West*, South Africa, 2020 – present
Jagersfontein Developments, Jagersfontein Pit SEIA, *Free State*, South Africa, 2019
AMEC (Wood Plc), Booysendal Platinum Mine SEIA, *Limpopo*, South Africa, 2017 – 2018
Uvuna Sustainability, Social Due Diligence Karma Gold Mine, Burkina Faso, 2015
Knight Piésold, Ethemba Dam ESIA, Swaziland, 2014 – 2015
AMEC (Wood Plc), Dugbe Gold Mine SEIA, Liberia, 2013 – 2014
Wildlands Conservation Trust, Social Monitoring and Evaluation Plan, Kwazulu Natal, South Africa, 2013
AMEC (Wood Plc), Putu Iron Ore SEIA, Liberia, 2012 – 2013
AMEC (Wood Plc), Buchanan Tailings Project SEIA, Liberia, 2012 – 2013

PUBLICATIONS AND PRESENTATIONS

Synergy Global**,** facilitated lectures on data gathering tools for the Community Relations Practitioners Courses held in April 2013 and September 2014, 2013 – 2014
Social Responsibility and Mining Conference, A Case Study of Stakeholder Engagement in Negotiating Resettlement Impact Assessments, Buenos Aires, Argentina, 2009
International Association of Impact Assessments South Africa (IAIAsa), Rural Appraisal and Social Impact Assessments, Limpopo, South Africa, 2008

REFERENCES

Mariyam Raziyeva, The World Bank Group, mraziyeva@worldbank.org
Melangini Pillay, Kumba Iron Ore Corporate Communications, Milangini.Pillay@angloamerican.com
Keven Liebenburg, Actuate, kevin@actuate.co.za

Appendix 2
Declaration of Independence

I, Tandi Kolbe, declare that:

•I act as the independent environmental practitioner in this application
•I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
•I declare that there are no circumstances that may compromise my objectivity in performing such work;
•I have expertise in conducting social impact assessments, including knowledge of the National Environmental Management Act 1998 (Act No. 107 of 1998) (NEMA) and any guidelines that have relevance to the proposed activity;
•I will comply with the Act, regulations and all other applicable legislation;
•I have no, and will not engage in, conflicting interests in the undertaking of the activity;
•I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
•I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
•I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
•I will keep a register of all interested and affected parties that participated in a public participation process; and
•I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
•all the particulars furnished by me in this form are true and correct;
•will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
•I realise that a false declaration is an offence and is punishable.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010.

Signature of the environmental practitioner:
Private Consultant

_____

Date: 28th February 2022

Appendix 3
List of Secondary Data Sources

Almond, JE, (2019) Desktop Palaeontological Heritage Study.

G & A Heritage (2019) Phase 1 Heritage Impact Assessment Report.

Kena Consult (2015) Towards Xhariep Distruct Rural Development Plan.

Kopanong Local Municipality (2014 – 2015) IDP Review

Kopanong Local Municipality (2016 – 2017) Annual Report

Kopanong Local Municipality (2017 – 2018) Annual Report

Philip, L (2016) Jagersfontein – the forgotten gem of the Free State.

SRK Consulting (2012) Review of Jagersfontein Pit Stability and Backfilling Options.

SRK Consulting (2019) Jagersfontein Pit Backfill Design Report.

Turn 180 (2019) Integrated Water and Waste Management Plan.

Xhariep District Municipality (2012 – 2017) Integrated Development Plan.

Xhariep District Municipality (2017 – 2018) Final Integrated Development Plan.

http://itumeleng-trust.org/

https://www.places.co.za/html/jagersfontein.html

Appendix 4
Attendance Register – 2019 Public Consultation Meeting

Appendix 5
Public Consultation Meeting 2019: Meeting Minutes

Appendix 6

Attendance Register – 2021 Public Consultation Meeting

Appendix 7

Public Consultation Meeting 2021: Meeting Minutes

Appendix 8

Public Notice

Appendix 9

Background Information Document

Appendix 10

Public Comments on Specialist Reports

Appendix 11

Socio-economic Waypoints

Community infrastructure	Latitude	Longitude
Sports Recreational in Itumeleng	-29.7750° S	025.4433° E
Boaramelo Combined School	-29.7739° S	025.4454° E
Cemetery	-29.7785° S	025.4523° E
Communal Borehole	-29.7807° S	025.4473° E
Charlesville recreational park	-29.7814° S	025.4331° E
SASSA Jagersfontein local office	-29.7811° S	025.4342° E
Xhariep District Municipality Office	-29.7811° S	025.4342° E
Re bone lesedi nursery creche	-29.7795° S	025.4337° E
Kopanong Local Municipality Office	-29.7640° S	025.4292° E
Jagersfontein Library	-29.7623° S	025.4267° E
Itumeleng Clinic	-29.7670° S	025.4345° E
SAPS	-29.7605° S	025.4233° E
Diamant District Hospital	-29.7605° S	025.4233° E
Museum	-29.7620° S	025.4225° E
Thusa Sechaba Crèche	-29.7633° S	025.4232° E
Itumeleng Community Trust	-29.7629° S	025.4231° E
Post Office	-29.7610° S	025.4243° E
Usave Supermarket	-29.7610° S	025.4252° E
Saint James Church	-29.7610° S	025.4256° E
Roman Catholic Church	-29.7596° S	025.4275° E
Jagersfontein Magistrates Office	-29.7598° S	025.4278° E
Jagersfontein Combined School and Intermidiary	-29.7601° S	025.4302° E
Saint Lawrence Primary	-29.7617° S	025.4313° E
Church	-29.7621° S	025.4305° E
Church	-29.7626° S	025.4302° E
Church	-29.7659° S	025.4325° E
Sports/football field	-29.7701° S	025.4368° E
Slagpale (privaat abattoir)	-29.7658° S	025.4296° E
Christ Embassy Church	-29.7635° S	025.4290° E