



**BACKGROUND INFORMATION DOCUMENT FOR THE DEVELOPMENT  
OF LITHIUM Highbury Mine within Ray Nkonyeni Local  
Municipality of Ugu District Municipality, KwaZulu Natal  
Province.**

**APPLICANT: SA LITHIUM (PTY) LTD**

**PREPARED BY: JOAN CONSULTING (PTY) LTD**

**DATE: AUGUST 2022**

**Cell:** 073 912 0800

**Tel:** 011 791 5032

**Fax:** 086 235 5142

**Email:** [Lufuno@joanprojects.co.za](mailto:Lufuno@joanprojects.co.za)

**Address:** No 9 Lourie Road, Randparkriff, Randburg, Gauteng

**Postal Address:** P O Box 4147, Honeydew, 2040

**Company registration No:** 2011/142803/07



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## **1. BACKGROUND AND INTRODUCTION**

SA Lithium (Pty)Ltd was granted Lithium Ore prospecting Right in terms of Section 16 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA) by Department of Mineral resources and Energy KwaZulu Natal Region on portion 0,1,2 of the farm The Corner 11328, portion 2, 3, 5,7,8 10, 11,12 of the farm Longwood 10289, farm Glanfield of Bembridge No 2 10837, portion 0,1,2,5,6,7, 8,9,10,11,13,14,17,18,20,21,22, 29,31,34, 35 of the farm Umsinsini 13307 in the Magisterial District of Port Shepstone in the Ray Nkonyeni Local Municipality, Kwazulu Natal Province.

SA Lithium (Pty)Ltd plan to lodge mining right application in August/September 2022. The mining right application will be lodged in terms of Section 27 of the Mineral and Petroleum Resources Development Act, 2002, and the integrated Environmental Authorisation will be lodged in terms of Section 24 of the National Environmental Management Act, 1998, (Act No 107 of 1998, read with Regulation 20 to 24 and 40 to 44 of the Environmental Impact Assessment Regulations 2014 as amended; Government Notice Regulations (GN R) 921 of Waste Management License Regulations of November 2013; and application for Water Use Licence (WULA) will be in terms of section 21 of the National Water Act (Act 36 of 1998).

SA Lithium Pty (Ltd) has appointed Joan Consulting Pty (Ltd), as the independent Environmental Assessment Practitioner (EAP), to undertake and facilitate all processes required for these applications. The process to be followed for the Integrated Environmental Authorisation is the Scoping and Environmental Impact Assessment Report (S&EIR).

## **2. PURPOSE OF THE DOCUMENT**

The purpose of the Background Information Document (BID) is to provide information to assist stakeholders in participating in the Scoping report and Environmental Impact Assessment report process. This BID has been developed to:

- Share information about the proposed project;
- Present the Scoping and Environmental Impact Assessment Report (S&EIR) process that will be followed to obtain environmental authorisation (EA) according to NEMA;
- Indicate the water use activities that will be triggered.
- Provide more details about the Public Participation Process (PPP) which will be followed.
- Discuss the impacts and mitigation measures
- An overview of the legislative context and a description of the manner in which the EIA will be undertaken.
- Contact details of the person to whom I&APs may submit their issues and concerns associated with the projects.

### **3. PROJECT LOCATION**

The proposed mining right application project is located on portion 0,1,2 of the farm The Corner 11328, portion 2, 3, 5,7,8 10, 11,12 of the farm Longwood 10289, farm Glanfield of Bembridge No 2 10837, portion 0,1,2,5,6,7, 8,9,10,11,13,14,17,18,20,21,22, 29,31,34, 35 of the farm Umsinsini 13307 in the Magisterial District of Port Shepstone in the Ray Nkonyeni Local Municipality, Kwazulu Natal Province. SA Lithium Highburly Mineral Right area is situated in KwaZulu Natal of the Republic of South Africa, an area approximately 16.5km North East of the town of Port Shepstone and lie Southwest and adjacent to the town of Hibberdene with the centre coordinates of 30°36'13.44"S 30°29'20.91"E. A Locality Map is attached to the overleaf page.

# Locality Map for SA Lithium Mining Right Application

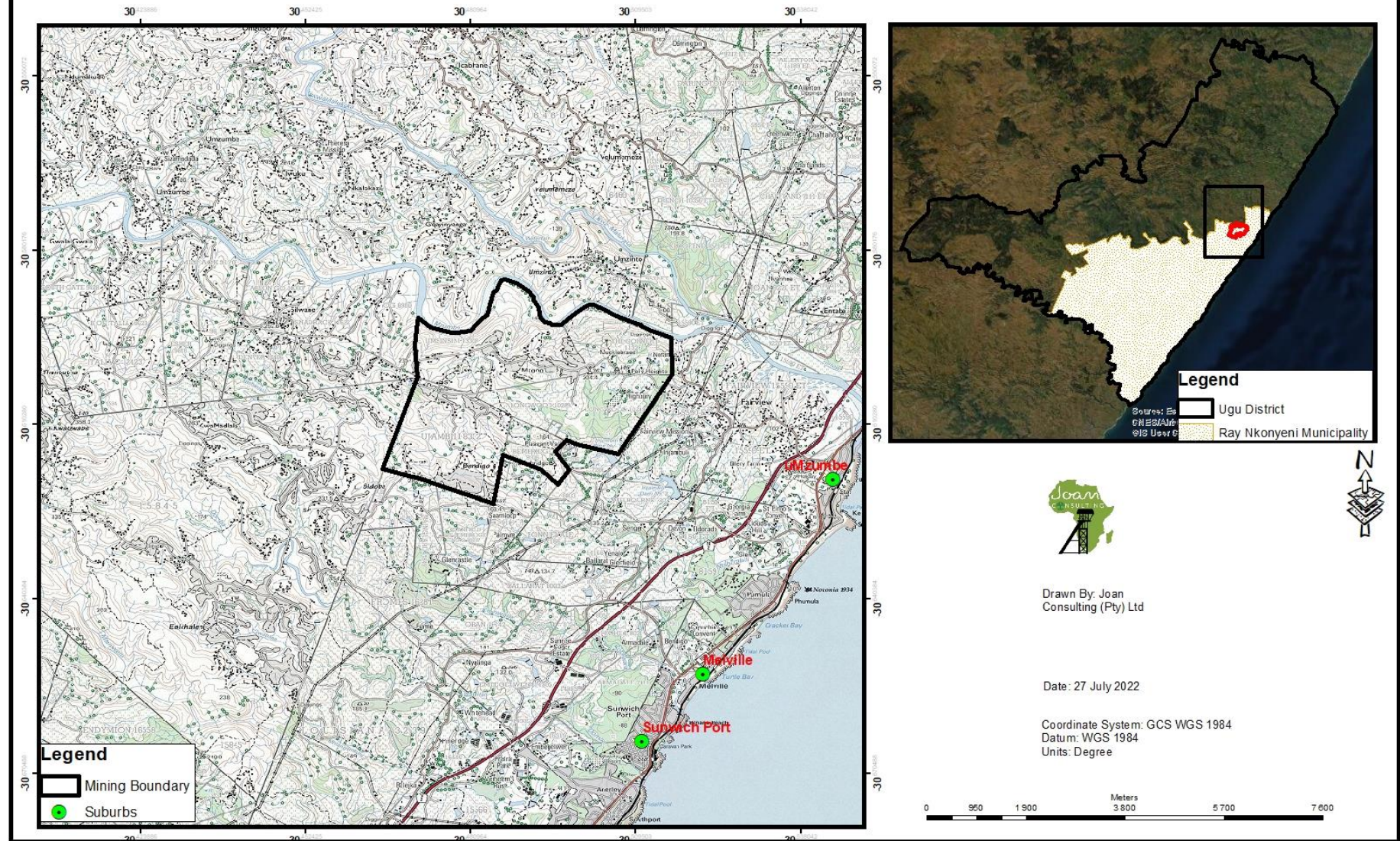
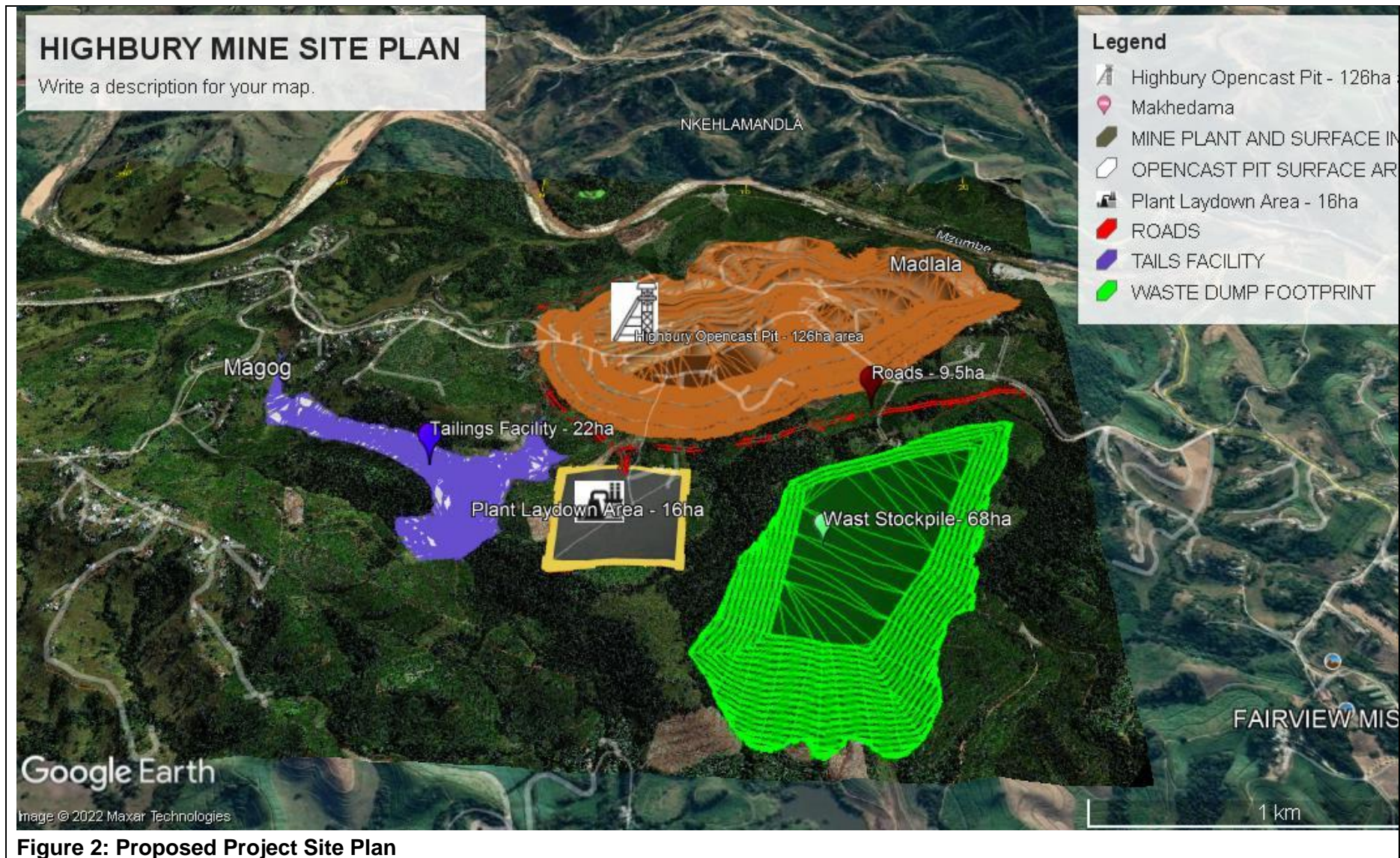


Figure 1: Locality Map 1



**Figure 2: Proposed Project Site Plan**

## **4. PROJECT DESCRIPTION**

Sa Lithium (Pty) Ltd propose to commence mining of Lithium Ore in Highbury mining right area which comprises of 520m strike length on the MZ and LZ reef. The MZ and LZ sub-crop lies to the Northern Mountain slope of the Right boundary. The general dip of the MZ is 10-25° towards the south. The LZ dips 10- 30° to the south. Access to the open pit resources will be via a typical open pit layout using ramps inclined at 1 in 10 inclinations for each bench. The proposed project has 2 main activities for the life of mine (LoM) on a site that is 1216 hectares in extent.

- Opencast mining
- Processing Plant

### **4.1. Open Pit Mining Method**

The typical mining operations would be to develop open pit with the planned life of mine of approximately 20 years and the following tasks are required to be completed prior to commencement of ore production.

- Preliminary works (including detailed engineering pit design);
- Site clearing and levelling;
- Relocation of existing infrastructure or cultural aspect in vicinity of open pit operations;
- Construction of surface infrastructure to support open pit operations.
- Establish waste stockpile sites and management system;
- Removal of the overburden and waste formations to access the ore;
- Processing Plant

The development of the Mining Right area will commence with the mining of the Main Zone Reef from the sub outcrop on the northern faces. This mining will allow for sufficient time to complete further work on the Lower Zone reef. The Main Zone comprises a thick pegmatite dipping south. Lower Zone succession that runs parallel and below the Main Zone, and a small remnant of Top zone that follows the Main Zone Dip on the NW portion also represents substantial pegmatite formation which would become minable once the phase 2 processing facility has been established. All Pegmatite Zones was identified with grades in excess of 1% Li<sub>2</sub>O and an average width of approximately 20m, which makes this a highly prospective mining target.

#### **4.1.1. Mining operations method**

The open pit mining process consist of drilling, blasting, loading and hauling using truck and excavator combinations conducted by a mining contractor. The operational method is discussed below;

#### **Bush-clearing and Topsoil Stripping**



The area to be mined will first be cleared by means of a tracked dozer to enable survey control and ground levels to be established. Topsoil will be stripped by means of dozing into stockpile berms on the highwall side as well as the outcrop side of the pit. Topsoil that cannot be economically dozed will be removed to stockpile by load and haul using an excavator and articulated dump trucks.

### **Establishment of Box-Cut**

A box cut will be developed to establish the initial access to the orebody. The box cut will be stepped [on the highwall side] up to surface in benches. Initially overburden from the box cut will be utilised in the construction of the tailings dam walls, haul roads and construction laydown areas.

### **Removal of Overburden**

Overburden will be excavated to stockpile using large 90 t and 120 t excavators matched with 40-60t dump trucks. Overburden will initially be transported to waste rock dumps located in close proximity to the final highwall, until such time that sufficient in-pit void volumes has been established, whereupon it will be re-loaded and hauled for placement in-pit.

### **Drilling and Blasting**

Hard overburden will be drilled and blasted in benches. Blasted material will be excavated to stockpile.

### **Ore Mining**

Ore will be mined during all working hours using a 90t excavator and 40t articulated dump trucks. The hanging wall face of the exposed orebody will be swept clean by the upturned bucket of the excavator to reduce dilution to a practical minimum. The footwall wall be cleaned mechanically by the excavator.

## **4.2. Processing Plant**

Lithium can be processed through different stages to extract final product.

- The ideal for Highbury is to construct a Lithium coarse beneficiation plant with an 167ktpm capacity.
- Lithium tailings processing plant is planned to be constructed to further beneficiate the tailings

The plant process flow for each stage of the project is fully described in the following sections.

The run of mine (RoM) material from the pits is delivered to the surface stockpile via truck. The stockpiled RoM material reports to crushing, screening and milling circuits prior to de-sliming for gravity concentration by the use of Dens Media Separation (DMS). The DMS plant design is based on the receipt of the Pegmatite product stream and consists of the following spiral stages:

- Rougher
- Cleaner

#### **4.2.1. Dense medium separation (DMS theory)**

Dense medium separation is a form of gravity separation technology that separates particles with different specific gravities into a float fraction (lower particle SG's) and a sink fraction (higher particle SG's). DMS technology has become very popular in spodumene beneficiation (compared to traditional beneficiation using flotation) due to lower capital and operating costs (reduced grinding, reagent and fines disposal costs).

The density at which separation occurs (also called the separation density or D50) is defined as the density at which a particle has a 50% probability of reporting to either the float or the sink stream. Under ideal conditions all particles with an SG higher than the separation density would report to the sink fraction and all particles with an SG lower than the separation density would report to the float fraction. The separation curve for such a scenario is depicted in graph 3 below. This specific separation curve was used to determine the theoretical yield for the three crush-size scenarios by changing the separation density to achieve a 6.0% Li<sub>2</sub>O content.

No dynamic separation technique would in practice be able to achieve an ideal separation as natural inefficiencies cause some of the higher SG particles to report to the float stream and some of the lower SG particles to report to the sink stream. The degree of inefficiency increases relative to the proximity of the particle SG to the separation density (also called near density material). The sharpness of the separation is displayed by the slope on the separation curve, which can be quantified by the "Probable Error of Separation" or EP and is defined as half of the density difference between the D75 and D25, where a lower EP indicates a higher separation efficiency.

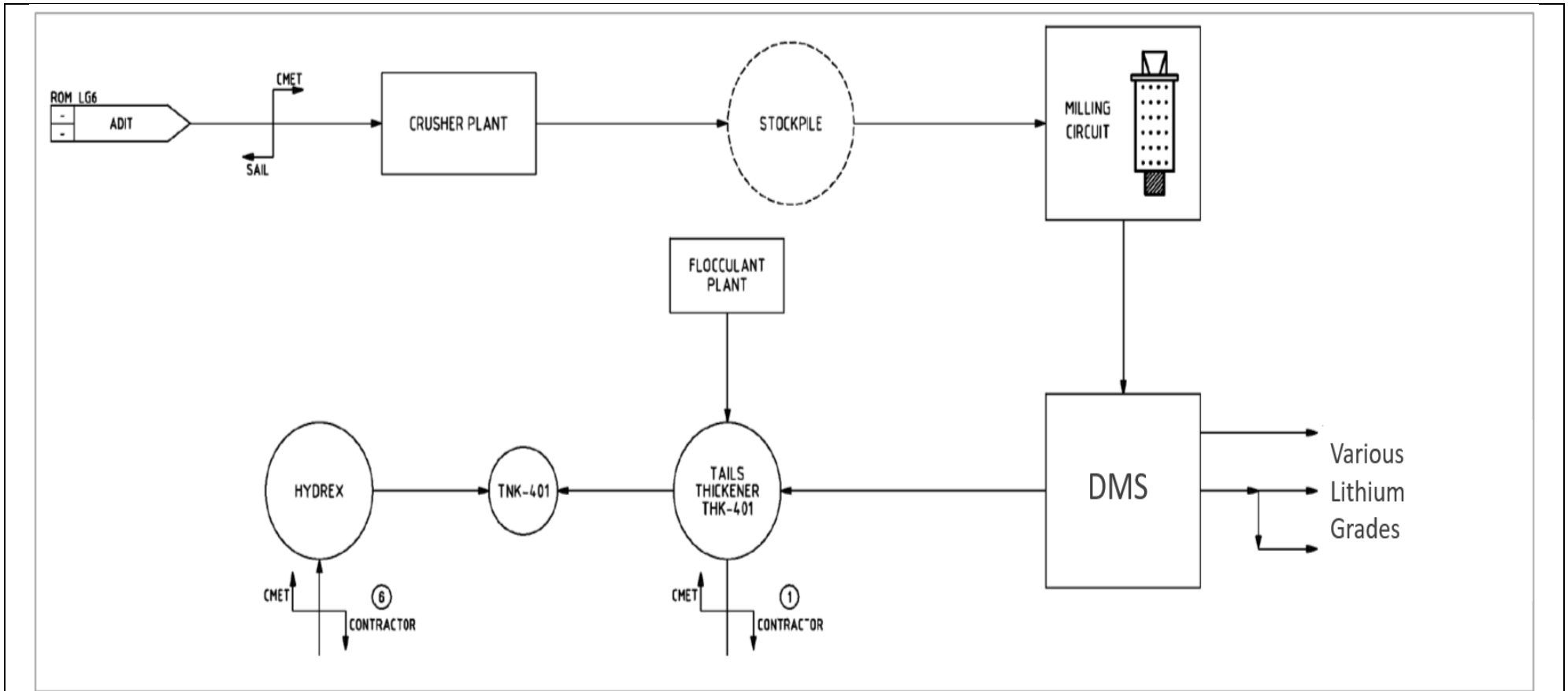


Figure 3: Pegmatite ore process flow diagram.

#### 4.2.2. Lithium Tailings Processing Plant

Tailings material from the pegmatite beneficiation plant is further processed at the flotation plant. The DMS plant tailings streams from Lithium plant and reports to the flotation feed thickener for process water recovery and to prepare thickened slurry for primary milling. The DMS plant tailings thickener underflow is pumped across to the Initiation Plant. The slurry reports to a primary ball mill for liberation at a finer grind. The ball mill is in closed circuit with a classification cyclone, the cyclone overflow reports to the rougher flotation condition tank prior to direct froth flotation. The main objective is to float the liberated Lithium as final product and leave the gangue minerals in the tailings stream for final tailings disposal.

Froth flotation is a method for physically separating particles based on differences in the ability of air bubbles to selectively adhere to specific mineral surfaces in mineral/water slurry. The Lithium particles in the spiral tails with attached air bubbles are then carried to the surface and removed as concentrate (Figure below). Chemical treatments (Collectors, Frothers, Activators, Depressants and pH) selectively alter the mineral surfaces so that they have the necessary properties for the separation of the Lithium spodumene minerals from silica gangue.

The flotation circuit comprises of the following circuits:

- Rougher
- Cleaner
- Re-cleaner
- Re-Re-cleaner

The process water recovered from the TSF will be recycled back into the process to reduce the freshwater top-up requirements. The return water reports to an intermediate process water dam, the clean water from the intermediate process water dam reports to the main process water supply dam.

Figure below shows the flow diagram of the Lithium tailings processing to be constructed. The final tailings are pumped through pipes to the tailings dam and process water is recycled back to the Lithium beneficiation plant.

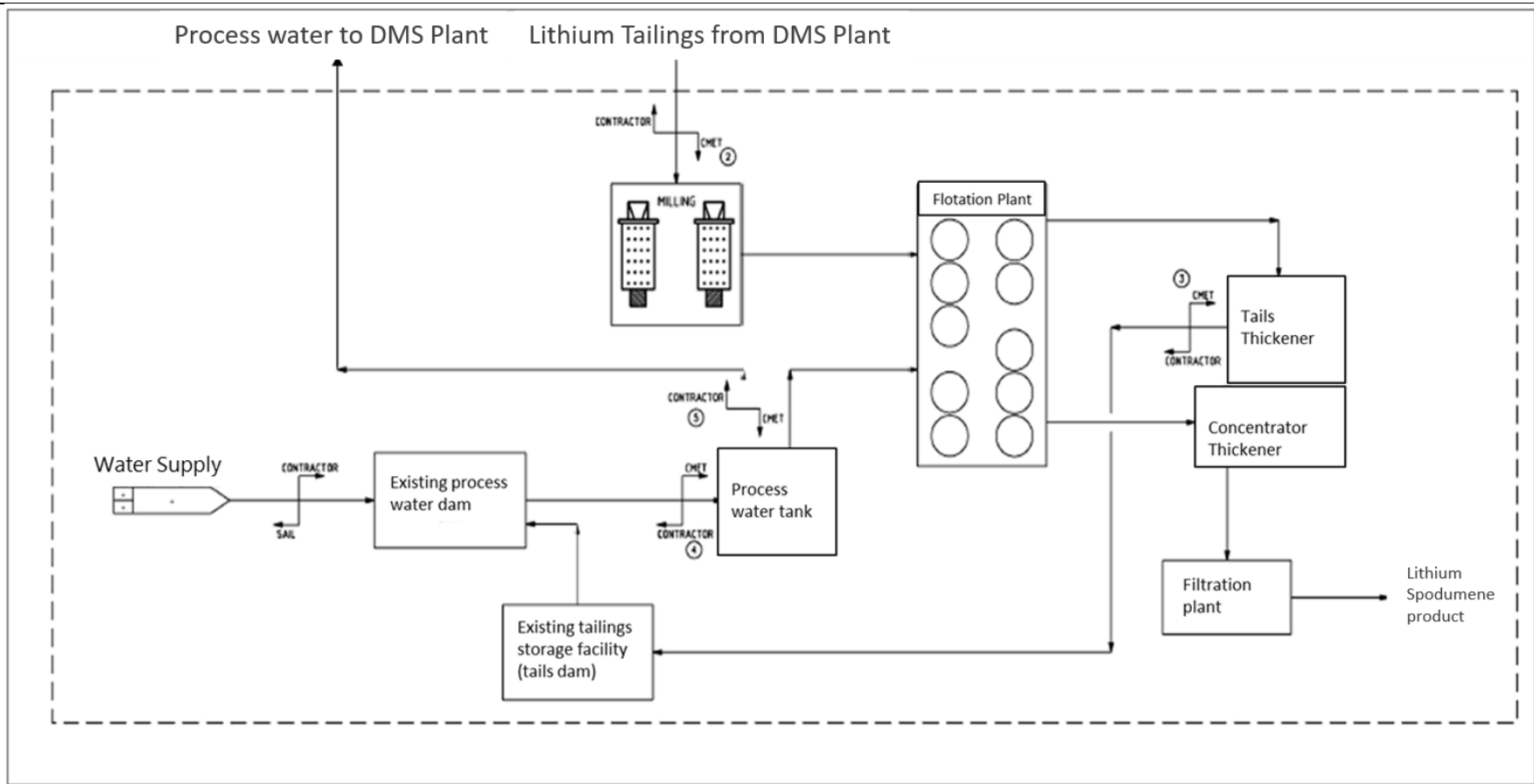


Figure 4: Lithium tailings process flow diagram

## **5. PROJECT NEED AND DESIRABILITY**

Although mining's contribution to South Africa's GDP has declined over the past 10-20 years, it remains one of the country's critical economic cornerstones and contributes to its economic activity, job creation and foreign exchange earnings. The sector is therefore critical to the country's socio-economic status.

Lithium (Li) is a light soft silver-white metal commonly found in three types of mineral deposits: brines (saline groundwater), pegmatites (hard rock), and sediments. The contained lithia concentration is generally low and therefore only a limited number of deposits can be economically extracted.

The Earth is facing climate change which is leading to global warming caused by the impact of human activities on the Earth because of overreliance on fossil fuels for energy supply.

The world has begun planning and implementation of the world-wide transition from fossil fuels to renewable sources of energy. Energy transition will involve replacement of fossil-fuel power generation with renewable power installations and use of Lithium batteries to address climate change crisis.

The world is transitioning from internal combustion engine (ICE) vehicles to battery-powered electric vehicles. This will increase Lithium Demand to meet increasing quantities for the energy transition from fossil fuels to renewable power in modern technological societies

The African deposits of lithium are sourced from hard rock deposits, generally associated with Mobile Belts. The host rock is the rare element class of pegmatites belonging to the lithium-caesium-tantalum (LCT) family. The host rock contains the lithium-bearing minerals of spodumene, petalite, lepidolite, amblygonite and eucryptite. Spodumene, a member of the pyroxene-group, may contain up to 3.73% Lithium. Other economical minerals associated with these pegmatites are: tantalite (coltan), pollucite (caesium), tin, mica, beryl and feldspar.

Exploration for Lithium (Li) at is at present on an unprecedented level and is one of the top elements being explored for in the World. This is primarily due to its use in lithium-ion batteries, which are the key to lightweight, rechargeable power for laptops, phones and other digital devices, particularly for electric vehicles.

## **6. ENVIRONMENTAL AUTHORISATION PROCESS**

The proposed development requires Environmental Authorisation and Waste Management License in terms of the National Environmental Management Act (NEMA) (Act 107 of 1998) and National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). The proposed project triggers activities identified in Government Notice Regulations (GN R) 327 and 325 (Listing Notice 1 and Listing notice 2, respectively) of the EIA Regulations of 2014 as amended in April 2017 and Government Notice Regulations (GN R) 921 of Waste Management License Regulations of November 2013. Thus a Scoping/EIA process is being undertaken to obtain the authorisation.

The proposed development will require water use license. Any person wishing to exercise a water use other than those defined in Schedule 1 of the National Water Act (NWA), 1998 (Act No. 36 of 1998) requires a water use licence.

## 6.1. Applicable listed activities in relation to the project

### 6.1.1. NEMA Requirements

The proposed project triggers activities identified in Government Notice Regulations (GN R) 327 and 325 (Listing Notice 1 and Listing notice 2, respectively) of the EIA Regulations of 2014 as amended in 2017. The development will follow Scoping and Environmental Impact Assessment process (S&EIR) and Public Participation Process (PPP).

**Table 1: Activities Triggered in terms of NEMA**

Applicable Listing	Description of the Activities	Specific activity
<b>Activities Listed in Listing Notice 1</b>		
Activity 9 of GNR 327	The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water I. with an internal diameter of 0,36 metres or more; or II. with a peak throughput of 120 litres per second or more; excluding where a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or b) Where such development will occur within an urban area.	Water supply
Activity 10 of GNR 327	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes I. with an internal diameter of 0,36 metres or more; or II. with a peak throughput of 120 litres per second or more; excluding where a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or Where such development will occur within an urban area.	Sewage Treatment Plant

<b>Applicable Listing</b>	<b>Description of the Activities</b>	<b>Specific activity</b>
Activity 14 of GNR 327	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	fuel storage tanks with combined of over 80 cubic metres
Activity 27 of GNR 327	<p>The development of a road</p> <p>iii. with a reserve wider than 30 metres; or</p> <p>iv. catering for more than one lane of traffic in both directions but excluding a road</p> <p>a) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010, in which case activity 24 in Listing Notice 1 of 2014 applies;</p> <p>b) which is 1 kilometre or shorter; or</p> <p>where the entire road falls within an urban area.</p>	construction of access and internal mine roads
<b>Activities Listed in Listing Notice 2</b>		
Activity 15 of GNR 327	<p>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for</p> <p>I. the undertaking of a linear activity; or</p> <p>II. Maintenance purposes undertaken in accordance with a maintenance management plan.</p>	Clearance of vegetation
Activity 17 of GNR 325	Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource or the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.	Open cast mining and related activities



### 6.1.2. NEMWA Requirements

The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA) governs all waste management activities. The Proposed mining operations will require waste management licence listed in Waste Management License Regulations GNR 921 of November 2013.

**Table 2: Activities Triggered in terms of NEMWA**

Activity Number	Activity Description	Specific activity
<b>Activities listed in Category B</b>		
Category B, Activity 7	The disposal of any quantity of hazardous waste to land	Tailings and waste rock dump
Category B, Activity 10	The construction of a facility for a waste management activity listed in Category B of this schedule. (Not on isolation to associated waste management activity)	Return water dam

### 6.1.3. Water Act Requirements

Integrated Water Use License Application (IWULA) will be compiled and submitted to the DWS to apply for the authorization of the water uses applicable to the proposed development. An Integrated Waste and Water Management Plan (IWWMP) will also be compiled and submitted as a supporting technical document to the IWULA. An IWWMP serves as a management tool for the mine to manage storm water, wastewater.

It is assumed, based on the proposed size of the development, that a WUL will be required for the following water uses:

**Table 3: Water Uses in terms of NWA**

Activity number	Water use
Section 21 (a) of NWA, 1998	Taking water from a water source
Section 21 (b) of NWA, 1998	Storing water
Section 21 (c) of NWA, 1998	Impeding or diverting the flow of water in a watercourse;
Section 21 (g) of NWA, 1998	Disposing of waste in a manner which may detrimentally impact on a water resource;
Section 21 (i) of NWA, 1998	Altering the bed, banks, course or characteristics of a watercourse

## 6.2. Environmental Impact Assessment Process

The proposed intention is to obtain integrated Environmental Authorisation. The activities required in the process require compliance with the National Environmental Management Act and associated Environmental Impact assessment regulations as amended in April 2017. Our commitment is to conduct the Environmental Impact Assessment studies within timelines.

An EIA is a planning and decision-making tool that is used to identify the environmental (and socio-economic) consequences of a proposed development, before the inception of that development. The purpose of the EIA process is to assess and demonstrate to the authorities and the proponent what the potential consequences of their choices will be in environmental, economic and social terms. Public concerns are therefore identified timeously and are evaluated and incorporated in the final EIA reporting for consideration in the final decision making over the proposed project.

**Table 4: Environmental Impact Assessment process**

Steps	Phase	Task	Timeline
1	Collection of Information	Environmental Pre- assessment	15 days
		Site visit	
		Baseline studies by specialists	
		Pre-consultation with Authorities	
		Compile application and supporting documents	
2	Application	Submit application with supporting documents	10 days
		Receive acknowledgement of receipt of application	
3	Public Participation	Advertisement	44 days
		Compiling Background information document	
		Identification and registering of stakeholders and interested and affected parties	
		Public Meeting	
		Placing of site notices	
4	Scoping	Submit Scoping Report for Public Review (at least 30 days)	43 days
		Submit Scoping Report to authorities that reflects incorporation of comments received (within 44 days after submitting application)	
		Authorities to accept or refuse Scoping Report (within 43 days of receiving the Scoping Report)	
5		Submit EI Report (inclusive of specialist studies) and EMPr for Public Review (at least 30 days)	106 days
		Submit EI Report (inclusive of specialist studies) and EMPr to Authorities that reflects incorporation of comments	

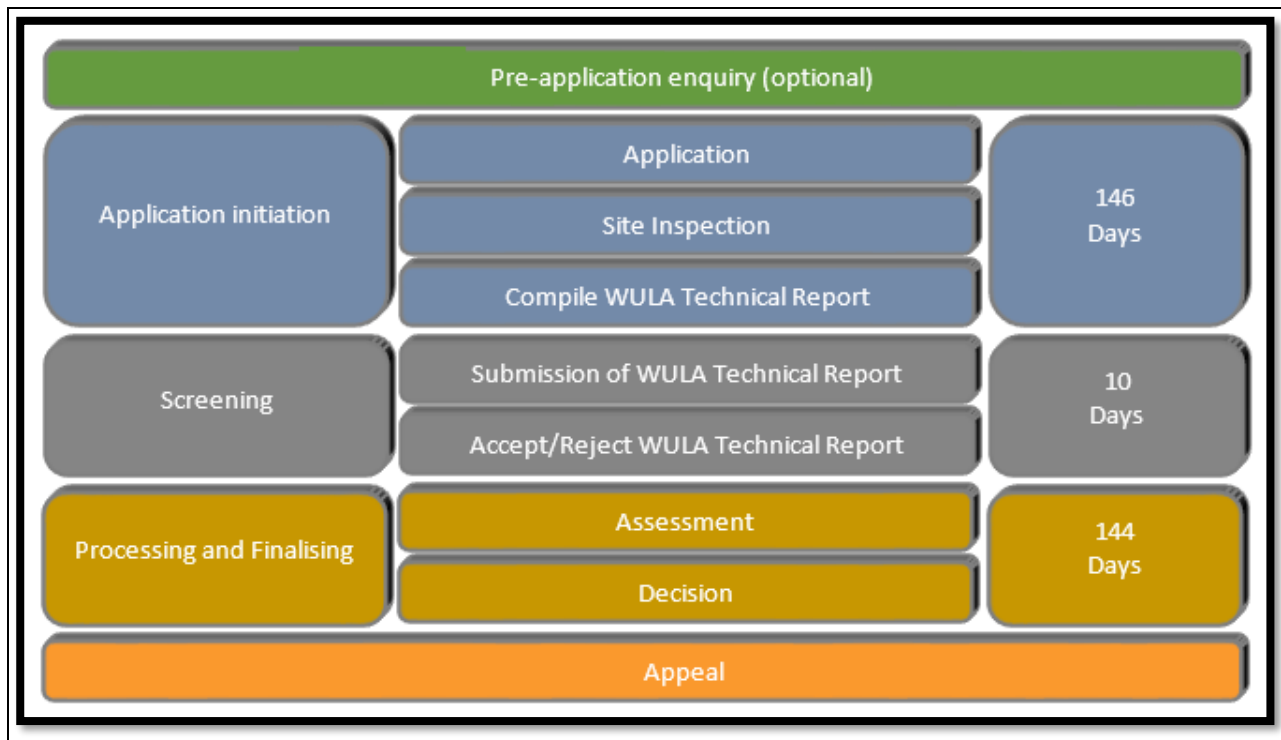
Steps	Phase	Task	Timeline
		received (within 106 days of acceptance of the Scoping Report)	
6	Environmental Authorisation	Authorities to grant or refuse environmental authorisation (within 107 days of receiving Basic Assessment report)	107 days
		Notification of interested and affected parties of Environmental Authorisation	14 days

### 6.3. Water Use Licence Application Process

There are generally 6 steps to processing any licence. These steps aim to test the application against the principle of beneficial use in the public interest and specifically against Section 27 of National Water Act (NWA). These steps are:

**Table 5: steps for processing Water use licence Application**

REQUIRED STEPS	DESCRIPTION
<b>1 - Pre-Application process:</b>	This is done when your licence application is received, and is used to check if everything needed to process the licence is available. You will be asked to provide missing information, and may get initial feedback before you pay your application fee (R 114.00) - so you can decide whether to continue.
<b>2- Application Initiation</b>	This is where the Department determines the information required to compile a water use licence application technical report to support the application. The determination of information requirements will be based on the information contained on the form or the site inspection, if required.
<b>Step 3 - Screening</b>	This is the screening of the Technical Report and the acceptance or rejection thereof.
<b>4 - Processing and Finalising</b>	This includes the assessment of the Technical Report where the information is evaluated by specialist groups, and recommendation to the Delegated Authority for a decision
<b>5 - Decision by the Delegated Authority</b>	After considering all the relevant information, the Delegated Authority will make a decision on whether to approve the application
<b>6 - Implementation</b>	The Regional Office starts with the implementation of the licence, including issuance and highlighting any conditions that might be attached to the water use licence.



**Figure 5:Water use License Process**

## **7. PUBLIC PARTICIPATION PROCESS (PPP)**

Public Participation Process (PPP) is undertaken in terms of Chapter 6 of the Environmental Impact Assessment Regulations 2014, GNR 326 as amended in April 2017.

### **7.1. Purpose of the Public Participation Process (PPP)**

The sharing of information forms the basis of the public participation process (PPP) and offers you, as an IAP, the opportunity to become actively involved in the process, and engage with Joan Consulting from the outset. Comments and inputs from IAPs are encouraged to ensure that all potential impacts are considered within the ambit of the study. The PPP aims to ensure that:

- Information that contains all the relevant facts in respect of an application is made available to I&APs for review.
- Public participation is facilitated in such a manner that stakeholders are provided with a reasonable opportunity to comment on a proposed project.
- An adequate public review period is provided for IAPs to comment on the findings of the draft Scoping and Environmental Impact Assessment Report, and draft EMPr (this is based on the legislated timeframes provided, i.e. 30-days)
- Incorporate the concerns raised by I&APs in the study and ultimate decision-making process.

On-going communication with registered parties will ensure that you will be kept informed of the progress of the environmental assessment process. You will be advised when documentation is available for

review and comment. As an IAP, your input is considered an invaluable part of this process, and we urge you to become involved.

## **7.2. Your Responsibilities as an I&APs**

Your attention is drawn to your responsibilities as an IAP:

- In order to participate in this process, you must register yourself on the project database with Joan Consulting.
- You must ensure that any comments/queries/concerns regarding the proposed project are submitted within the stipulated timeframes.
- In terms of the EIA Regulations, you are required to disclose any direct business, financial, personal or other interest which you may have, in the approval or refusal of the application for the proposed project.

## **7.3. Getting Involved**

- By responding by phone, fax, post or e-mail to the invitation for your involvement which will be advertised in the local newspaper.
- By returning the attached Comments and Registration form to the relevant contact person.
- By contacting the environmental consultants with queries or comments.
- By reviewing and commenting on the Scoping and Environmental Impact Assessment Report within the stipulated 30-day public reviews period, when released.

Your input forms a key element of the process. If you consider yourself an IAP for this proposed project, we urge you to make use of the opportunities created by the PPP to provide comments, raise issues and concerns which affect and/or interest you or request further information.

## **7.4. Comments and Queries**

The project title should be quoted when commenting, enquiring and responding. Direct all comments, queries, or responses to:

Name of the EAP : Lufuno Mutshathama;  
Cell : 073 912 0800  
Tel : (011) 791 5032  
Fax : 086 235 5142  
E-mail : [lufuno@joanprojects.co.za](mailto:lufuno@joanprojects.co.za)  
Postal Address : PO Box4147, Honeydew, 2040

Once the authorities have made a decision regarding the project, stakeholders will be informed accordingly.

## **8. POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT**

Below is a summary of the impacts of the proposed project and will be assessed in the Scoping and Environmental Phase.

**Table 6: Construction Phase Mitigation Measures**

Activity	Potential Impact	Aspect	Mitigation/Management Measures
Construction (mine infrastructure,)	Creation of Dust	Air Quality	<ul style="list-style-type: none"> <li>• Suppress dust</li> <li>• Monitor dust fall out</li> <li>• Speed limits must be established on dirt roads.</li> <li>• Vegetate soil stockpiles, soil berms and all exposed areas</li> </ul>
	Generation of Noise	Humans and animals	<ul style="list-style-type: none"> <li>• Monitor occupational noise levels as required by the law</li> <li>• Machinery and equipment must be regularly serviced.</li> <li>• Mine will consider conducting noisy activities during the day as far as possible.</li> <li>• When deciding on vehicles for the construction activities consider noise parameters;</li> <li>• Limit construction activities to daytime</li> </ul>
	Vegetation removal	Flora	<ul style="list-style-type: none"> <li>• Remove vegetation only in the designated areas</li> <li>• Prioritise low sensitivity areas (disturbed areas) rather than natural areas where feasible.</li> <li>• Use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.</li> <li>• No open fires must be allowed on site such as for cooking.</li> <li>• Prohibit the harvesting of indigenous trees for firewood and indigenous flora in general.</li> <li>• Limit the development footprint of the proposed development as far as possibly,</li> </ul>
Construction (mine infrastructure, powerline and road construction)	Soil erosion	Soil	<ul style="list-style-type: none"> <li>• The gravel haul road drainage system and surface must be well maintained</li> <li>• The vegetative (grass) cover on the soil stockpiles (berms) must be continually monitored in order to maintain a high basal cover.</li> <li>• Keep as much original land cover as possible</li> <li>• Erosion control measures such as intercept drains and toe berms must be constructed where necessary.</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management Measures
			<ul style="list-style-type: none"> <li>Gravel roads must be well drained</li> </ul>
	Habitat disruption	Fauna	<ul style="list-style-type: none"> <li>Limit the development footprint of the proposed development as far as possible</li> <li>Demarcate construction areas by semi-permanent means/material, in order to control movement of personnel, vehicles, providing boundaries for construction site</li> </ul>
	Spillage and seepage of wastewater	Ground & surface water	<ul style="list-style-type: none"> <li>All chemicals should be stored in bunded areas with a capacity of no less than 110% of the content.</li> <li>drip trays should be utilised at all times on all trucks and heavy machineries.</li> <li>Contaminated soils must be managed as hazardous material</li> </ul>
	Alien invasive establishment	Flora	<ul style="list-style-type: none"> <li>Compile and implement an alien invasive species management plan and implement it.</li> </ul>
Site Preparation for the open Cast pit mining	Soil pollution and contamination	Soil	<ul style="list-style-type: none"> <li>Store fuel, chemicals and other hazardous substances in suitable secure weather-proof containers with impermeable and bunded floors to limit pilferage, spillage into the environment, flooding or storm damage.</li> <li>Ensure that the excavator and frontend loader are properly maintained. Equipment must be regularly serviced and inspected to make sure there are no leaks of oil, diesel, fuel, detergents or hydraulic fluids.</li> <li>Under no circumstances should oil or diesel to be disposed of at the site.</li> </ul>
Site Preparation for the open Cast pit mining	Dust pollution due to exposure to loose soils	Air Quality	<ul style="list-style-type: none"> <li>Handling must minimise the creation of dust and handling must be reduced during windy conditions.</li> <li>Wetting of construction area must occur during very dry or windy conditions or if dust becomes a major problem</li> </ul>
	Change in land use to mining	Land use	<ul style="list-style-type: none"> <li>Limit all impacts only to the approved development footprint and mining right area.</li> </ul>



Activity	Potential Impact	Aspect	Mitigation/Management Measures
Site Preparation for the open Cast pit mining	Loss of and disturbance to archaeological / heritage sites	Heritage and Archaeology	<ul style="list-style-type: none"> <li>• Cultural site and graves uncovered during operations will be cordoned off, and marked as no-go zones and evaluated by a specialist before proceeding with further activity.</li> <li>• Implement the Heritage study recommendations</li> </ul>
	Loss of farming	Flora and fauna	<ul style="list-style-type: none"> <li>• Rehabilitate land as close to the original land-use as possible;</li> <li>• Erosion control measures such as intercept drains and toe berms must be constructed where necessary</li> <li>• Revegetate all denuded areas that are not in use,</li> </ul>
	Poor Visibility due to dust creation	Visual	<ul style="list-style-type: none"> <li>• Implement dust suppression techniques where necessary</li> </ul>
	Increase in traffic in the area	Traffic	<ul style="list-style-type: none"> <li>• Manage traffic properly during construction to avoid accidents and congestion</li> <li>• Advise road users of the detour road if available;</li> <li>• Ensure that drivers obey all the rules of the road.</li> </ul>
	Soil compaction	Land Capability	<ul style="list-style-type: none"> <li>• Keep infrastructure localized to reduce footprint;</li> <li>• Tracked vehicles are more desirable than wheeled vehicles due to their lower point loading and slip, while vehicle speed should be maintained in order to reduce the duration of applied pressure</li> <li>• Rip the compacted areas that will not be used post construction at the end of the construction phase.</li> </ul>
	Employment creation and decrease in unemployment	Socio-Economic	<ul style="list-style-type: none"> <li>• Local labour should be used as far as possible;</li> <li>• Implement the SLP</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management Measures
Incidental Spills and/or leaks of potentially hazardous substances	Soil Contamination	Soil and land Capability	<ul style="list-style-type: none"> <li>• Spill prevention and emergency spill response plan, as well as dust suppression, and fire prevention plans will be implemented during the construction phase</li> <li>• An emergency response contingency plan will be implemented to address clean-up measures should a spill and/or a leak occur</li> <li>• Spill kits will be provided for onsite spill clearing</li> <li>• All potential contaminants and hazardous substances hydrocarbons, cement, waste collection and storage areas will be located on bunded areas to capture and spills and leaks</li> <li>• Waste associated with construction phase activities will be stored and removed.</li> </ul>

**Table 7: Operational Phase mitigation Measures**

Activity	Potential Impact	Aspect	Mitigation/Management Measures
Mining Activities: Open cast Excavations	Alteration of the Geology of the area	Geology	<ul style="list-style-type: none"> <li>No mitigation measures are possible, as mining permanently destroys the geological strata.</li> <li>The mining operations will remain within the limits of the designated mining right area.</li> </ul>
Open Cast pit mining Operational	Soil pollution and contamination	Soil	<ul style="list-style-type: none"> <li>Store fuel, chemicals and other hazardous substances in suitable secure weather-proof containers with impermeable and bunded floors to limit pilferage, spillage into the environment, flooding or storm damage.</li> <li>Ensure that the excavator and frontend loader are properly maintained. Equipment must be regularly serviced and inspected to make sure there are no leaks of oil, diesel, fuel, detergents or hydraulic fluids.</li> <li>Under no circumstances should oil or diesel to be disposed of at the site.</li> </ul>
Open Cast pit mining Operational	Soil compaction	Soil	<ul style="list-style-type: none"> <li>Tracked vehicles are more desirable than wheeled vehicles due to their lower point loading and slip, while vehicle speed should be maintained in order to reduce the duration of applied pressure, thereby minimizing compaction</li> <li>Compacted soils must be ripped.</li> </ul>
Open Cast pit mining Operational	Dust pollution due to exposure to loose soils	Air Quality	<ul style="list-style-type: none"> <li>Dust suppression measures such as spraying of water on site access route and around site must be implemented.</li> <li>Speed limits will be established and enforced on the mine to minimise dust generation.</li> <li>Areas with difficulty to manage fallout dust and erosion may be treated with chemical dust suppressant or paved as opposed to using water</li> </ul>
Open Cast pit mining Operational	Ore will be stockpiled at the	Soil and land Capability	<ul style="list-style-type: none"> <li>The stockpile and load out area (where stockpiling will take place) should be lined;</li> <li>Boreholes will be placed in positions to determine the upstream and downstream water quality of all dirty water systems;</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management Measures
	stockpile and load out areas		
	Poor visibility due to dust creation	Visual	<ul style="list-style-type: none"> <li>Implement dust suppression spraying where necessary to restrict the visual impact of dust emissions.</li> </ul>
	Chemical soil pollution	Soil and land Capability	<ul style="list-style-type: none"> <li>A comprehensive Material Safety Data Sheet list will be drawn up of all chemicals stored on site;</li> <li>Contaminated soils must be managed as hazardous material and treated accordingly</li> <li>Accidental spillage must be minimised and contained</li> </ul>
Open Cast pit mining Operational	Loss or degradation of natural fauna habitat	Fauna and Flora	<ul style="list-style-type: none"> <li>Before mining operations can commence, the Mining Manager in consultation with the ECO must clearly demarcate the mining footprint and the access road footprint.</li> <li>Any fauna found on the stockpile site needs to be relocated away from the mining site without causing any damage or harm</li> </ul>
	Contamination from dirty runoff	Surface Water	<ul style="list-style-type: none"> <li>Storm water Management Plan implemented and maintained;</li> <li>All spills must be cleaned immediately.</li> </ul>
	Increase in population size	Socio-Economic	<ul style="list-style-type: none"> <li>Employment criteria should be communicated to the community in advance (e.g. in newspapers, community forum notice boards, etc);</li> <li>Local labour should be employed as far as possible;</li> </ul>
	Employment creation and decrease in unemployment	Socio-Economic	<ul style="list-style-type: none"> <li>Non-locals should only be hired when specialist skills, which are not available locally</li> <li>Local residents and communities should be employed, wherever possible;</li> <li>Local construction companies should be used whenever possible, especially for subcontracting work; and</li> <li>Local suppliers should be used as far as possible</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management Measures
Open Cast pit mining Operational	Generation of waste	Waste management	<ul style="list-style-type: none"> <li>Littering should be prohibited, and all waste generated from the site should be cleared. A 'no waste dumping' sign should also be placed on site.</li> <li>Waste generated by workers must be collected and disposed of weekly at the nearest registered landfill.</li> <li>Store waste in labelled containers, indicating clearly whether the waste is hazardous or non-hazardous (general waste).</li> <li>Burning of waste material will not be permitted.</li> <li>Absorbent materials used to clean up spillages should be disposed of in a separate hazardous waste bin</li> </ul>
Open Cast pit mining Operational	Increase in noise Levels	Noise	<ul style="list-style-type: none"> <li>When working near residential area the Contractor shall limit the number of simultaneous activities to the minimum</li> <li>At all stages surrounding community should be informed with respect to the potential increase of noise from the mine. The information presented to stakeholders should be factual and should not set unrealistic expectations</li> <li>Ensuring that equipment is well maintained and fitted with the correct and appropriate noise abatement measures.</li> <li>All machines should be roadworthy and should be equipped with appropriate noise reduction equipment.</li> </ul>
Open Cast pit mining Operational	<ul style="list-style-type: none"> <li>Damage to road infrastructure.</li> <li>Increased traffic</li> </ul>	Traffic	<ul style="list-style-type: none"> <li>Traffic control measures aimed at reducing the entrainment of material by restricting traffic volumes and reducing vehicle speeds</li> <li>Speed limits will be established and enforced on the mine to minimise accidents</li> <li>Traffic signs to be put around the site to notify motorists and drivers about the activities</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management Measures
			<ul style="list-style-type: none"> <li>The mine shall ensure that the internal haul roads are adequately maintained, including monthly scraping where required</li> </ul>
Open Cast pit mining Operational	<ul style="list-style-type: none"> <li>Fire and explosion hazard.</li> <li>Flying rock.</li> </ul>	Health and Safety	<ul style="list-style-type: none"> <li>Personal Protective Equipment (PPE) to employees should be provided by the mine and each employee should ensure that they wear correct PPE at all times</li> <li>The mine shall implement a safety reporting procedure to ensure that all accidents and incidents (safety and environmental) are recorded.</li> </ul>
Open Cast pit mining Operational	Discovery of graves and other heritage resources	Heritage Resources	<ul style="list-style-type: none"> <li>Should artefacts or archaeological items be observed, then all activity should cease immediately, the area marked off and a specialists consulted prior to any further activity</li> <li>Should graves be observed on site during activity progress then all activity should cease and the area demarcated as a no-go zone</li> </ul>
Open Cast pit mining Operational	Ground water Pollution though oil spills	Ground water	<ul style="list-style-type: none"> <li>Vehicles and equipment must be regularly serviced and maintained.</li> <li>Refuelling of vehicles and equipment will be done with care to minimise the chance of spillages;</li> <li>Dip trays will be placed under parked vehicles and machinery</li> </ul>
Open Cast pit mining Operational	<ul style="list-style-type: none"> <li>Direct and indirect mortality of flora and fauna.</li> <li>Habitat destruction</li> <li>Introduction of invasion alien Plants</li> </ul>	Flora and Fauna	<ul style="list-style-type: none"> <li>weed management plan should developed and implemented throughout the lifespan of the project.</li> <li>The weed management plan shall include appropriate measures for removal/control of alien vegetation across the entire site</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management Measures
Open Cast pit mining Operational	Ground vibration and human perception.	Ground vibration and human perception.	<ul style="list-style-type: none"> <li>• Detailed blast design for each blast with consideration of the effects from blasting</li> <li>• Calculate expected ground vibration levels for blast to be done and if necessary, re-design to reduce charge mass</li> <li>• Record stemming lengths for each blast and correct, if necessary, prior to every blast blasted.</li> <li>• Surrounding community must be notified of the date and time of the blasting.</li> </ul>

**Table 8: Decommissioning Phase mitigation measures**

Activity	Potential Impact	Aspect	Mitigation/Management measures
Transport to remove infrastructure	Soil Compaction	Soil and Land Capability	<ul style="list-style-type: none"> <li>• Tracked vehicles are more desirable than wheeled vehicles due to their lower point loading and slip, while vehicle speed should be maintained in order to reduce the duration of applied pressure, thereby minimizing compaction</li> <li>• Compacted soils must be ripped.</li> </ul>
Spillage of used hydrocarbons or chemical	Chemical Soil Pollution	Soil and Land Capability	<ul style="list-style-type: none"> <li>• All chemicals should be stored in bunded areas with a capacity of no less than 110% of the content</li> <li>• Should vehicles be serviced on site, this has to be undertaken in surfaced and contained areas</li> <li>• In addition to the above, drip trays should be utilised;</li> <li>• A comprehensive Material Safety Data Sheet list will be drawn up of all chemicals stored on site.</li> <li>• Contaminated soils must be managed as hazardous material</li> <li>• Accidental spillage must be minimised and contained;</li> <li>• The spilled substance must be captured and stored in a suitable container within bunded area</li> <li>• Determine the depth and width that the oil/diesel has penetrated into the soil as far as possible, by digging up the polluted soil (excavating); and</li> <li>• Remove the polluted ground to one side and mix it thoroughly with the bioremediation powder</li> <li>• All fluids must be contained within properly constructed enclosure with concrete flooring Fuel tanks should be placed and operated such that accidental spillage potential is minimized and contained.</li> </ul>



Activity	Potential Impact	Aspect	Mitigation/Management measures
Removal of infrastructure	<ul style="list-style-type: none"> <li>• Direct impacts on flora species of conservation importance</li> <li>• Loss or degradation of natural vegetation/ pristine habitat</li> <li>• Direct impacts on ecological connectivity &amp; ecosystem functioning</li> <li>• Increase in alien invasive plant</li> </ul>	Flora	<ul style="list-style-type: none"> <li>• Prohibit activities outside of the footprint area;</li> <li>• Prevent contamination of natural habitat from any source of pollution;</li> <li>• Prohibit all open fires;</li> <li>• Provide demarcated fire-safe zones, facilities and suitable fire control measures;</li> <li>• Use of branches of trees, shrubs or any vegetation for fire making purposes is strictly prohibited;</li> <li>• The irresponsible use of welding equipment, oxyacetylene torches and other naked flames, which could result in veld fires, or constitute a hazard and should be guided by safe practice guidelines;</li> <li>• Access is to be established by vehicles passing over the same track on natural ground.</li> </ul>
Removal of infrastructure	<ul style="list-style-type: none"> <li>• Loss/ degradation of surrounding habitat</li> </ul>	Fauna	<ul style="list-style-type: none"> <li>• Prohibit activities outside of the footprint area</li> <li>• Prevent contamination of natural habitat from any source of pollution.</li> <li>• Prohibit all open fires.</li> <li>• Provide demarcated fire-safe zones, facilities and suitable fire control measures.</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management measures
	<ul style="list-style-type: none"> <li>Increase in local and regional fragmentation/ isolation of habitat</li> </ul>		
Removal of infrastructure	Dust Creation	Air Quality	<ul style="list-style-type: none"> <li>Implement dust suppression spraying where necessary.</li> <li>Limit the movement of vehicle to established haul roads as far as possible.</li> </ul>
Closure Period	Contamination from dirty runoff	Surface Water	<ul style="list-style-type: none"> <li>Storm water Management Plan maintained until after rehabilitation</li> <li>All clean and dirty water systems will remain up until all contaminated sources have been removed.</li> </ul>
Removal of infrastructure	Impact on Heritage sites on the proposed area	Heritage	<ul style="list-style-type: none"> <li>Report all uncovered heritage and archaeological artefacts to the local heritage agency</li> <li>All heritage and archaeological artefacts and graves uncovered during operations will be handled by the specialist.</li> <li>Graves should be left in situ, geo-referenced and left alone until investigated by an archaeologist.</li> </ul>
Removal of infrastructure	Improved Visual Impact	Visual Impact	<ul style="list-style-type: none"> <li>Removal of infrastructure will improve general visual impact of the area.</li> </ul>
Rehabilitation activities	Improved soil conditions	Soil and land Capability	<ul style="list-style-type: none"> <li>Implementation of the rehabilitation Plan.</li> <li>Topsoil will be sampled to determine the quality thereof. A soil specialist will be involved to fertilise the soils where required</li> <li>All compacted areas will be ripped and ameliorated where required.</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management measures
			<ul style="list-style-type: none"> <li>Rehabilitated areas will be fenced off up until it is determined that the landscape is stable.</li> </ul>
Rehabilitation activities	Positive impact on topography	Topography	<ul style="list-style-type: none"> <li>The area will be shaped to be free draining.</li> </ul>
Rehabilitation activities	Improvement of vegetation	Flora	<ul style="list-style-type: none"> <li>The rehabilitation activities will be undertaken in such a manner to promote the self-succession of vegetation.</li> <li>Should it be found that self-succession is not taking place the mine will investigate manners (such as vegetating the area) to promote a seedbed formation</li> <li>The weed management programme will be maintained up until closure is obtained</li> <li>Rehabilitated areas will be fenced off up until it is determined that the landscape is stable.</li> </ul>
Rehabilitation activities	Contaminated runoff	Surface water	<ul style="list-style-type: none"> <li>Storm water Management Plan will be maintained until rehabilitation activities have been completed and the area is regarded as stable.</li> <li>At that stage, the infrastructure will be removed and the area will be shaped to ensure free drainage.</li> </ul>
Spreading of contaminant plume	Poor quality leachate from Slimes dam	Ground water	<ul style="list-style-type: none"> <li>Nitrate concentration will decrease over time due to leaching by infiltrating rainwater</li> <li>leaching by infiltrating rainwater.</li> </ul>
Demolishing of all surface infrastructure	<ul style="list-style-type: none"> <li>Habitat loss due to inappropriate demolition practices,</li> <li>inefficient rehabilitation</li> </ul>	Biodiversity	<ul style="list-style-type: none"> <li>Rehabilitation of disturbed areas must be implemented and grass seeds of species indigenous to the area must be used</li> <li>Monitoring and control of Alien Invasive Plant (AIP) must be done during the decommissioning and closure phase</li> <li>Disturbed areas caused during the demolition activities need to be ripped and rehabilitated and seeded with grass seeds indigenous to the area</li> </ul>

Activity	Potential Impact	Aspect	Mitigation/Management measures
	of disturbed areas		<ul style="list-style-type: none"> <li>Care must be taken when rehabilitation activities need to be performed within wetlands and associated buffer zones as these areas are sensitive and manual labor needs to be the preferred option.</li> </ul>

**SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED THE DEVELOPMENT OF Highbury Mine within Ray Nkonyeni Local Municipality of Ugu District Municipality, KwaZulu Natal Province. IN TERMS OF EIA Regulations of 2014 as amended in April 2017 and Waste Regulations of November 2013.**

**Comments and Response Sheet**

Name and Surname			
Company/ Organisation			
Capacity (landowner, manager, director, Interested party etc.)			
Postal Address			
Email Address			
Fax Number			
Telephone and/or Cell phone Number			
Have you received a BID?	Yes	<input type="checkbox"/>	
	No	<input type="checkbox"/>	

**Questions, comments and responses**

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Would you like to be kept informed about progress of the proposed project?	Yes	<input type="checkbox"/>	
	No	<input type="checkbox"/>	

Are there any other individuals, organisations or stakeholders who you think should be consulted regarding the development? If yes, provide list their names and contacts details?

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Contact Details for Registering as an I&AP and commenting on the proposed project:  
 Tel: (011) 791 5032|0739120800; E-mail: lufuno@joanprojects.co.za; Postal Address: PO Box4147, Honeydew,2040 | Fax 086 235 5142