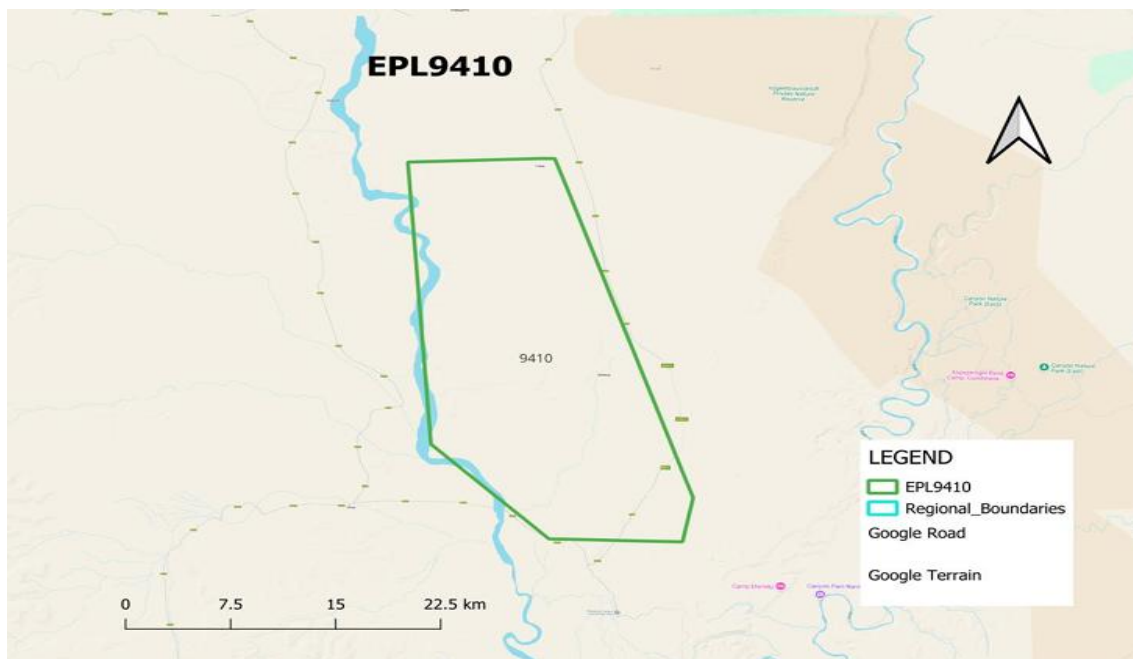




**Application No: 250224005418**

**Environmental Impact Assessment for the Proposed Exploration Activities of Base and Rare Metals, Precious Metal, Dimension Stone, Industrial Minerals, Nuclear Fuel Minerals on Exclusive Prospecting Licenses 9410 at Ariamab Area, Karas Region**

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# **1 ACRONYMS AND ABBREVIATION**

|                  |   |
|------------------|---|
| <b>DEA</b>       | Department of Environmental Affairs           |
| <b>EA</b>        | Environmental Assessment                      |
| <b>EAP</b>       | Environmental Assessment Practitioner         |
| <b>EC</b>        | Environmental Commissioner                    |
| <b>ECC</b>       | Environmental Clearance Certificate           |
| <b>ECO</b>       | Environmental Compliance Officer              |
| <b>EIA</b>       | Environmental Impact Assessment               |
| <b>EMA</b>       | Environmental Management Act (No. 7 of 2007)  |
| <b>EMP</b>       | Environmental Management Plan                 |
| <b>EPL</b>       | Exclusive Prospecting License                 |
| <b>I&amp;APs</b> | Interested and Affected Parties               |
| <b>MEFT</b>      | Ministry of Environment, Forestry and Tourism |
| <b>PPE</b>       | Personal Protective Equipment                 |
| <b>RC</b>        | Reverse Circulation                           |
| <b>RD</b>        | Red-Dune Consulting CC                        |
| <b>TORs</b>      | Terms of Reference                            |

## **I. EXECUTIVE SUMMARY**

JG Investments Three (Pty) Ltd, a subsidiary of Epangelo Mining Company (Pty) Ltd, is the proponent for proposed mineral exploration activities within Exclusive Prospecting License (EPL) 9410, which covers an area of 47,014.6195 hectares of farmland at Ariamab Area, Karas Region.

An Environmental Impact Assessment (EIA) for the project was conducted, which included a comprehensive evaluation of potential impacts and benefits associated with the project as well as tailored mitigation measures to address identified impacts and ensure that the project adheres to both local and international environmental standards. Key recommendations for mitigation include waste management, and adherence to a robust Environmental and Management Plan (EMP) to ensure that the project activities minimizes any negative effects on the surrounding environment.

Exploration activities, when conducted with care, are generally not harmful to the environment. Particular attention will be paid during line cutting operations to avoid mature and protected trees, ensuring minimal disturbance to the local flora. Therefore, it is recommended that the approving authority grant approval and issue an Environmental Clearance Certificate for the project.

## **2 OVERVIEW**

This Environmental Management Plan (EMP) has been developed in accordance with the findings and recommendations of the comprehensive Environmental Impact Assessment (EIA) conducted for Exclusive Prospecting License (EPL) 9410. The EIA report provides an in-depth analysis of the proposed project, including a detailed description of the planned exploration activities and a thorough assessment of the potential environmental and socio-economic impacts associated with those activities.

Building upon the EIA, this EMP outlines the specific management strategies, mitigation measures, and monitoring plans that will be implemented to address the identified environmental risks. It serves as a practical framework to guide the proponent and all involved stakeholders in ensuring that exploration activities are conducted in an environmentally responsible and sustainable manner, in compliance with national environmental legislation and best industry practices throughout the life cycle of the exploration project

## **3 PURPOSE OF THE EMP**

The key objective of this EMP is to ensure that all exploration activities associated with Exclusive Prospecting License (EPL) 9410 are carried out in an environmentally sustainable and legally compliant manner. It serves as a comprehensive risk management strategy designed to address and mitigate potential environmental impacts associated with the project. It provides a clear logical framework that outlines what needs to be done, how it will be monitored, and the steps to reduce potential negative effects on the environment. It ensures that environmental protection is integrated into every phase of the project, supporting sustainable exploration practices in alignment with relevant legal and regulatory requirements.

Furthermore, the EMP clearly defines the roles and responsibilities of all stakeholders involved in the project, including the project proponent, contractors, environmental consultants, and regulatory

authorities ensure accountability, effective implementation of mitigation measures, and continuous environmental performance improvement.

## 4 KEY LEGAL FRAMEWORK

The implementation of this Environmental Management Plan (EMP) is guided by the national legal and regulatory framework governing environmental protection and sustainable development in Namibia. Compliance with these laws is essential to ensure that the project is conducted in an environmentally responsible manner and in alignment with both national priorities and international best practices.

A list of national and international legislation and policies relevant to this project is provided in the EIA, however, at national level KEY legislation and policies includes:

- **Environmental Management Act, No. 7 of 2007:** This is the primary legislation governing environmental assessment and management in Namibia. It requires that all activities likely to have a significant effect on the environment undergo an Environmental Impact Assessment (EIA) to obtain an Environmental Clearance Certificate (ECC).
- **Environmental Impact Assessment (EIA) Regulations (GN 30 of 2012):** These regulations provide the procedures for conducting EIAs and outline the requirements for the preparation and submission of EMPs.
- **Minerals (Prospecting and Mining) Act, No. 33 of 1992:** Regulates all aspects of mineral exploration and mining activities, including licensing, environmental responsibilities, and reporting requirements for license holders.
- **Water Resources Management Act, No. 11 of 2013:** Governs the use and protection of water resources, which is particularly relevant if the project involves water abstraction or has the potential to affect surface or groundwater quality.
- **Forestry Act, No. 12 of 2001:** Ensures the conservation of forest resources and requires permits for the removal of protected tree species.
- **Labour Act, No. 11 of 2007 and Health and Safety Regulations:** Provide guidelines to protect workers' rights and ensure safe and healthy working conditions.

- **National Environmental Policy (2008):** Establishes guiding principles for sustainable development and environmental protection in Namibia.

The project proponent is committed to adhering to all applicable legal requirements and to maintaining open communication with regulatory authorities to ensure ongoing compliance throughout the duration of the project.

## 5 ROLES AND RESPONSIBILITY

To promote accountability, effective implementation of mitigation measures, and continuous environmental performance improvement, it is essential assign clear delegation of roles and responsibilities across all levels of the project. The following outlines the key roles and their associated responsibilities to ensure the successful implementation of the EMP.

**Table 1.** Roles and Responsibility

| Role  | Responsibility   |
|---|--|
| <b>Proponent: JG Investment Three Pty Ltd</b> | <ol style="list-style-type: none"> <li>1) Overall responsibility for ensuring that the project complies with all environmental legislation and regulations.</li> <li>2) Allocate resources and budget for the implementation of the EMP.</li> <li>3) Appoint an Environmental Control Officer (ECO) to oversee day-to-day environmental management on site.</li> <li>4) Ensure that the EMP is regularly reviewed and updated to reflect any changes in project scope, legislation, or environmental conditions.</li> <li>5) Liaise with regulatory authorities and stakeholders to report on environmental performance and address any concerns.</li> </ol> |
| <b>Environmental Compliance Officer (ECO)</b> | <ol style="list-style-type: none"> <li>1) Monitor and ensure compliance with the EMP, environmental regulations, and site-specific requirements.</li> </ol>  |



|                                       |   |
|---------------------------------------|---|
|                                       | <ol style="list-style-type: none"> <li>2) Conduct regular site inspections to verify the implementation of mitigation measures.</li> <li>3) Coordinate with project personnel to ensure proper waste management, pollution control, and safety protocols are followed.</li> <li>4) Prepare regular environmental performance reports, including monitoring results and corrective actions, and submit these reports to the project proponent and relevant authorities.</li> <li>5) Lead training sessions for project staff on environmental best practices and legal obligations.</li> <li>6) Act as the primary point of contact for environmental matters and regulatory agencies.</li> <li>7) Modifying or improving mitigation measures for purposes of corrective action</li> </ol> |
| <b>Site Manager</b>                   | <ol style="list-style-type: none"> <li>1) Ensure the project's overall operations are conducted in accordance with the EMP and approved environmental permits.</li> <li>2) Supervise all exploration activities to ensure they align with environmental guidelines.</li> <li>3) Work closely with the ECO to implement corrective actions when environmental non-compliance is identified.</li> <li>4) Ensure that all personnel are appropriately trained in environmental procedures and that they adhere to the safety protocols established in the EMP.</li> </ol>  |
| <b>Contractors and Subcontractors</b> | <ol style="list-style-type: none"> <li>1) Ensure that all contracted activities comply with the EMP and all applicable environmental regulations.</li> <li>2) Provide their workers with adequate environmental and safety training.</li> <li>3) Monitor and report on the environmental performance of their activities.</li> <li>4) Implement mitigation measures specific to their scope of work as outlined in the EMP and ensure that they are properly maintained.</li> </ol>   |

|   |  |
|---|--|
| <b>Employees and Field Staff</b>                            | <ol style="list-style-type: none"> <li>1) Follow all environmental and safety procedures outlined in the EMP.</li> <li>2) Participate in environmental training and awareness programs.</li> <li>3) Report any environmental incidents, non-compliance, or unsafe practices to the site manager immediately.</li> <li>4) Assist in maintaining a clean and safe working environment and ensure the proper use of personal protective equipment (PPE).</li> </ol> |
| <b>Ministry of Environment, Forestry and Tourism (MEFT)</b> | <ol style="list-style-type: none"> <li>1) Review and approve the EMP and any associated permits or licenses.</li> <li>2) Conduct inspections and audits to ensure compliance with environmental laws and regulations.</li> <li>3) Provide oversight and guidance on environmental compliance.</li> </ol>   |

## 6 MITIGATION MEASURES TABLES

The mitigation measure tables are systematically structured to address specific social and biophysical environmental issues that may arise throughout the project cycle. To gain a clearer understanding of the broader context, readers are advised to refer to EIA / scoping report for a comprehensive analysis of potential impacts as it provides in-depth insights into the environmental and social risks associated with the project and serves as a foundational document that informs the development of the mitigation strategies outlined in this EMP.

**Table 2.** Social Environment: Impacts Assessment

| <b>Environmental / Social Impact</b>                    | <b>Objectives</b>   | <b>Proposed Mitigation Measures</b>  | <b>Monitoring Indicator</b>   | <b>Party Responsible</b> |
|---|---|--|---|--------------------------|
| <b>Access</b>   | To avoid conflict between JG Investment Three Pty Ltd and Farm Owners                                 | <ol style="list-style-type: none"> <li>1. Inform Landowners well in advance before your planned activities</li> <li>2. Do not enter the area without owners' consent</li> </ol>  | Recorded conflict, Identification documents   | Proponent / Site Manager |
| <b>Induction</b>  | To ensure that all employees are familiar with the requirements of the EMP                            | <ol style="list-style-type: none"> <li>1. All employees must go through an induction course for the provision of the EMP.</li> <li>2. Staff operating specialised equipment and heavy vehicle must be properly trained</li> </ol>  | Induction minutes, training reports, and attendance registers   | Site Manager             |
| <b>Employment / Socio-Economic advancement of local</b> | Although significant employment is not expected, the proponent must abide to the relevant labour laws | <ol style="list-style-type: none"> <li>1. Ensure that all general work is reserved for local people unless in circumstances where specialized skills are required.</li> <li>2. Fair compensation and labour practise as per Namibian Labour Laws must be followed</li> <li>3. Ensure skill transfer to the locals</li> </ol> | Employees records, Labour unrest over unfair compensation, Document training sessions, and other capacity-building efforts to monitor the extent and success of skill transfer initiatives. | Site Manager             |

| <b>Environmental / Social Impact</b>    | <b>Objectives</b>  | <b>Proposed Mitigation Measures</b>   | <b>Monitoring Indicator</b>  | <b>Party Responsible</b> |
|---|--|---|--|--------------------------|
| <b>HIV/AIDS, Alcohol and Drug abuse</b> | To sensitise employees about the danger of alcohol, drugs and HIV/AIDS | <ol style="list-style-type: none"> <li>1. Provide awareness to the employees on danger of alcohol, (HIV/AIDS) and drug abuse</li> <li>2. Provide condoms to workers to promote safe sex practices.</li> </ol>   | Awareness meeting minutes  | Site Manager             |
| <b>General Safety</b>                   | To ensure good health and safety for the employees and public          | <ol style="list-style-type: none"> <li>1. Abide by the Occupational Health and Safety and Labour Act of Namibia and other statutory requirement such as International Labour Practise (ILO)</li> <li>2. Develop a health and safety plan / policy</li> <li>3. Ensure that every employee went through an induction course about safety.</li> <li>4. Employees must be equipped with all necessary Personal Protective Equipment (PPE). These includes, Helmet, Overall, Safety Shoes, Safety Glasses, Gloves, Earmuff etc.</li> <li>5. During operations, minor accidents are likely to occur; therefore, it is essential to</li> </ol> | Induction Minutes, Valid driver licenses for heavy vehicles, Complaints of health issues by employees, PPE for all employees & Health certificates records | Site Manager             |

| Environmental /<br>Social Impact | Objectives                              | Proposed Mitigation Measures   | Monitoring<br>Indicator  | Party<br>Responsible |
|----------------------------------|---|--|--|----------------------|
|                                  |   | <p>have a well-stocked first aid kit readily available on-site</p> <p>6. Only qualified and licenced personnel must be allowed to operate machinery and vehicles.</p> <p>7. No employee must be allowed to be onsite without PPE.</p> <p>8. Adequate safety signs must be displayed on site.</p> <p>9. Unauthorised fire shall not be permitted on site.</p> |  |                      |
| <b>Health</b>                    | To ensure good health for the employees | <p>1. Employees must NOT be exposed to noise levels above the required -85dB (A) limit over a period of 8 hours.</p> <p>2. Adhere to the Labour act, non-toxic human dust exposure levels may not exceed 5mg/m3 for respiratory dust and 15mg/m3 for total dust.</p> <p>3. Supply clean drinking water to the site, such as portable water tank</p>          | <p>Complain from farmers</p> <p>Health complaints from employee and employee's fitness certificate</p> | Site Manager         |

| <b>Environmental /<br/>Social Impact</b> | <b>Objectives</b>  | <b>Proposed Mitigation Measures</b>  | <b>Monitoring<br/>Indicator</b>                        | <b>Party<br/>Responsible</b> |
|--|--|--|--|------------------------------|
|  |  | 4. Use mobile toilets<br>5. Ensure that supervisor has gone through occupational health and first aid course,<br>6. Train employee on hazard and risk avoidance<br>7. Provide insect repellent, mosquito nets and if necessary, immunization to prevent deadly diseases such as malaria, |  |                              |
| <b>Visual Impact</b>                     | To prevent litter and waste from being scattered and to preserve the aesthetic value of the area | 1. Maintain proper site housekeeping practices to ensure a clean and organized exploration area.<br>2. Trenches, access roads, camping places must be rehabilitated<br>3. Place waste collection bins at designated points and ensure regular waste disposal                             | Scattered Litter,<br>Visual inspection                 | Site Manager                 |
| <b>Traffic</b>                           | To ensure coordinated movement of heavy vehicles   | 1. Trucks must be installed with a rotating headlight beam light<br>2. Truck must maintain a low speed to prevent excessive dust and accident  | Records of public complaints,<br>Visible warning signs | Site Manager                 |

| <b>Environmental /<br/>Social Impact</b>                     | <b>Objectives</b> | <b>Proposed Mitigation Measures</b>  | <b>Monitoring<br/>Indicator</b>                     | <b>Party<br/>Responsible</b> |
|--|-------------------|--|---|------------------------------|
|  |                   | 3. The roads must be maintained by scrapping and compacting<br>4. Install warning signs where necessary  |   |                              |
| <b>Archaeology<br/>/Heritage<br/>Resources<br/>Artefacts</b> | Preserve Heritage | 1. Employee must be trained on the possible find of heritage and archaeological material in the area;<br>2. Implement a chance find and steps to be taken for heritage or archaeological material finding (Heritage (rock painting and drawings), human remains or artefacts) are unearthed<br>Stopping the activity immediately <ul style="list-style-type: none"> <li>i. Informing the operational manager or supervisor</li> <li>ii. Cordoned of the area with a danger tape and manager to take appropriate pictures.</li> <li>iii. Manager/supervisor must report the finding to the competent authorities National Heritage</li> </ul> | Sighting report/s of heritage resources / artefacts | Management or Site Manager   |

| Environmental /<br>Social Impact | Objectives | Proposed Mitigation Measures   | Monitoring<br>Indicator | Party<br>Responsible |
|----------------------------------|------------|--|-------------------------|----------------------|
|                                  |            | Council of Namibia (061 244 375)<br>National Museum (+264 61<br>276800) or the National Forensic<br>Laboratory (+264 61 240461). |                         |                      |



**Table 3.** Bio-Physical Environment: Impacts Assessment

| <b>Environmental / Social Impact</b> | <b>Objectives</b>  | <b>Proposed Mitigation Measures</b>   | <b>Monitoring Indicator</b>   | <b>Party Responsible</b> |
|--------------------------------------|--|---|---|--------------------------|
| <b>Biodiversity: Flora</b>           | To ensure sustainable conservation the vegetation          | <ol style="list-style-type: none"> <li>1. Mature trees should be preserved and not cut down</li> <li>2. Do not harvest firewood</li> <li>3. Educate employees and stakeholders about the importance of protecting native flora.</li> <li>4. Ensure that access roads are rehabilitated after use to enhance revegetation</li> </ol>             | Complaints, records and Monitoring Reports on Vegetation Status             | Site Manager             |
| <b>Biodiversity: Fauna</b>           | To ensure the protection of animals, particularly wildlife | <ol style="list-style-type: none"> <li>1. Refrain from harming or killing animals found on-site unless they present an immediate and unavoidable threat to human life.</li> <li>2. There must be ZERO tolerance to poaching</li> <li>3. Implement wildlife monitoring to track animal movements and prevent disturbances to habitats</li> </ol> | Complaints from farmers, record of poaching and wildlife monitoring reports | Site Manager             |

| <b>Environmental / Social Impact</b>         | <b>Objectives</b>                   | <b>Proposed Mitigation Measures</b>  | <b>Monitoring Indicator</b> | <b>Party Responsible</b> |
|--|-------------------------------------|--|-----------------------------|--------------------------|
| <b>Conservation of Ground Water Resource</b> | To prevent exposure of ground water | <ol style="list-style-type: none"> <li>1. Ensure that drilled holes are properly closed to prevent ground water exposure unless otherwise as agreed with the locals</li> <li>2. Use of Environmentally Friendly Drilling Fluids Utilize drilling fluids that are non-toxic and biodegradable to minimize contamination risks</li> <li>3. Comply with the Water Resources Management Act 11 of 2013, which mandates the management, protection, development, use, and conservation of water resources in Namibia</li> </ol> | Rehabilitated drilled sites | Site Manager             |
| <b>Surface and Ground water pollution</b>    | To prevent water pollution          | <ol style="list-style-type: none"> <li>1. Fuelling of heavy vehicle on site must be well coordinated at designated places</li> <li>2. Stationary vehicles must be provided with drip tray to capture oil, lubricants and hydraulic fluids leakages</li> <li>3. All vehicle and machinery must be well service to avoid leakages</li> <li>4. Provide and train on oil spill emergency</li> </ol>  | Physical inspection         | Site Manager             |

| <b>Environmental /<br/>Social Impact</b> | <b>Objectives</b>                                 | <b>Proposed Mitigation Measures</b>   | <b>Monitoring<br/>Indicator</b>                      | <b>Party<br/>Responsible</b> |
|--|---|---|--|------------------------------|
|  |   | <p>response</p> <p>5. Servicing of vehicles and machinery must take place at designated sites</p>   |  |                              |
| <b>Land Degradation</b>                  | To prevent soil erosion                           | <p>1. Movement of heavy vehicles must be coordinated and restricted to be on access roads</p> <p>2. Normally, gravel roads are meant for light vehicles, exploration vehicles have the potential to damage the farm access roads. Hence proper road maintenance must be implemented to ensure that the roads are left on good state</p> | Physical inspection                                  | Site Manager                 |
| <b>Waste Generation</b>                  | To ensure good housekeeping and prevent littering | <p>1. Provide Skip bins to collect waste and be disposed of at an approved disposal site</p> <p>2. Do not bury waste on site</p> <p>3. Excavate a small biodegradable waste site that would be dump filled at the end of the project alternatively, provide mobile toilets that will be disposed at an approved municipal site</p>      | <p>Waste bins on site</p> <p>Physical inspection</p> | Site Manager                 |

| <b>Environmental /<br/>Social Impact</b> | <b>Objectives</b>   | <b>Proposed Mitigation Measures</b>   | <b>Monitoring<br/>Indicator</b>               | <b>Party<br/>Responsible</b> |
|--|---|---|---|------------------------------|
|  |   | 4. Used oil, grease and lubricants cans must be collected in appropriate drums and disposed of at an approved site.   |   |                              |
| <b>Noise Impacts</b>                     | To prevent noise pollution from flying aircraft   | 1. The aircraft must fly at heights which may not cause noise nuisance to animals<br>2. A fixed wing aircraft is recommended than a helicopter  | Complaints from farmers and members of public | Site Manager                 |
| <b>Oil Leakages</b>                      | Manage fuels, oils and lubricants leakages from Vehicles and Machinery to prevent pollution | 1. Ensure all vehicles are well service and leak inspection are done;<br>2. Provide drip trays to stationary vehicle<br>3. Servicing of vehicle must be done at an approved site or at areas agreed with the farm owner.<br>4. Re-fuelling, oil replacement must be done on approved sites; | Physical verification and routine monitoring  | Management or Site Manager   |

## 7 REHABILITATION AND DECOMMISSIONING PLAN

The exploration activities do not necessarily culminate in a decommissioning phase but rather transition into a rehabilitation phase. This rehabilitation process is designed to restore the environment by addressing the physical footprints created during exploration, including access roads, trenches, and drilled holes that should be rehabilitated immediately after use to restore the landscape. This might involve re-vegetation efforts to reintroduce native plant species and stabilize soil structures.

Following geochemical sampling with drilling equipment, all casings must be removed, and drill holes must be securely sealed to prevent environmental hazards (see Figure 1). However, if mutually agreed upon with Farm owner, casings may be left in place to facilitate the creation of water boreholes, providing lasting benefits to residents.

Additionally, waste dumps containing biodegradable materials must be backfilled to prevent environmental degradation. Any pit latrines constructed during the exploration period should also be properly closed and rehabilitated to ensure that they do not pose health or environmental risks. Moreover, all infrastructure built for exploration purposes should be dismantled or repurposed where feasible, ensuring that the site returns as closely as possible to its original state.



**Figure 1.** RC drill hole after rehabilitation (Image for illustration purposes).

## **8 CONCLUSIONS AND RECOMMENDATIONS**

### **8.1 Conclusion**

The Environmental Impact Assessment (EIA) has successfully identified, assessed, and addressed the potential environmental and social impacts associated with the project. In terms of waste management, health and safety, heritage and archaeology and socio-economic impacts, mitigation strategies have been identified to ensure minimal environmental degradation and social disturbance to minimize negative environmental impacts.

With adequate implementation of this EMP, the proposed exploration activities are expected to be conducted in an environmentally sustainable manner. However, if the exploration leads to the establishment of a mine, it will be essential to conduct a comprehensive Environmental and Social Management Plan (ESMP) must be developed to ensure that appropriate mitigation measures are implemented to protect the environment throughout the mine's lifecycle.

### **8.2 Recommendations**

#### *8.2.1 Management Recommendations*

To ensure that the project is implemented with minimal adverse environmental and social impacts, it is recommended that management implement the following:

- a) Implement a continuous monitoring of biodiversity throughout the project's lifecycle and undertake regular environmental audits and reporting monitor the effectiveness of mitigation measures.
- b) Engage with local communities regularly to ensure their concerns are addressed, particularly regarding health, safety, and social dynamics.
- c) Implement a strict waste management protocol for both solid and hazardous waste. Ensure that all waste is properly segregated, stored, and disposed of in compliance with national and international environmental standards.
- d) All employees, contractors, and stakeholders should undergo regular training on environmental and social responsibility, to ensure full compliance with the EMP.

### 8.2.2 *Regulator Recommendation*

Based on the finding of the EIA and the developed mitigation measures (EMP), it is recommended that the approving authority issue the Environmental Clearance Certificate (ECC) for the project. Moreover, the approving authority is advised to conduct periodic environmental inspections to ensure compliance. Furthermore, regular oversight will help identify any emerging issues early, enabling timely corrective actions to be taken and ensuring that the project continues to meet regulatory standards and best practices for environmental protection.

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