ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) FOR THE PROPOSED MIDVAAL BRICK MANUFACTURING FACILITY, LOCATED IN THE TOWN OF MEYERTON, GAUTENG PROVINCE.

GDARD REFERENCE NUMBER: GAUT 002/21-22/E2872

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ABBREVIATIONS

GDARD	Gauteng Department of Agriculture and Rural Development
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Compliance Officer
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act (No 107 of 1998)
NEMAQA	National Environmental Management Air Quality Act (No 39 of 2004)
NEMWA	National Environmental Management Waste Act (No 59 of 2008)
OHSA	Occupational, health and Safety Act (Act No 181 of 1993)
SAHRA	South African Heritage Resources Agency
PPE	Personal Protective Equipment

Definitions:

CONTRACTOR:
Companies and or individual persons appointed on behalf of the Client to undertake activities, as well as their sub-contractors and suppliers.

DOMESTIC WASTE:
Domestic waste means waste, excluding hazardous waste, that emanates from premises that are used wholly or mainly for residential, educational, health care, sport or recreation purposes generated directly by the consumption of products for domestic use.

EMERGENCY:
An undesired event that results in a probable significant environmental impact and requires the notification of the relevant statutory body such as a local or provincial authority

ALIEN VEGETATION: alien vegetation is defined as undesirable plant growth which shall include, but not be limited to; all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

CONSTRUCTION ACTIVITY: a construction activity is any action taken by the contractor, his subcontractors, suppliers or personnel during the construction process.

ENVIRONMENT: environment means the surroundings within which humans exist and that could be made up of -

- The land, water and atmosphere of the earth;
- Micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

ECOSYSTEM: A dynamic system of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

ENVIRONMENTAL IMPACT: an impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

ENVIRONMENTAL AUTHORISATION: is a written statement from Mpumalanga Department of Economic Development, Environment and Tourism, that records its approval of a planned undertaking to construct an access bridge and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

ENVIRONMENTAL CONTROL OFFICER:
An individual nominated through the Client to be present on site to act on behalf of the Client in matters concerning the implementation and day to day monitoring of the EMPr and conditions stipulated by the authorities as prescribed in NEMA.

ENVIRONMENTAL MANAGEMENT PROGRAMME:
A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive environmental impacts and limiting or preventing negative environmental impacts are implemented during the life-cycle of the project.

ENVIRONMENTAL IMPACT:
A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

HABITAT: The place in which a species or ecological community occurs naturally.

INCIDENT:
An undesired event which may result in a significant environmental impact but can be managed through internal response.

MITIGATION:
Measures designed to avoid, reduce or remedy adverse impacts.

GENERAL WASTE LANDFILL SITE:
A waste disposal site that is designed, managed, permitted and registered to allow for the disposal of general waste.

HAZARDOUS WASTE:
Hazardous waste means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.

POLLUTION:
A change in the environment caused by substances (radio-active or other waves, noise, odours, dust or heat emitted from any activity, including the storage or treatment or waste or substances. place in

WASTE:

Waste means any substance, whether or not that substance can be reduced, re-used, recycled and recovered -

a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
b) which the generator has no further use of for the purposes of production;
c) that must be treated or disposed of; or
d) that is identified as a waste by the relevant Minister by notice in the Gazette, and includes waste generated by the manufacturing facilities, medical or other sector, but—
    i. a by-product is not considered waste; and
    ii. any portion of waste, once re-used, recycled and recovered, ceases to be waste.

WASTE DISPOSAL FACILITY:

Waste disposal facility means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premises.

1. INTRODUCTION

From the beginning of civilization bricks have been used as an important material for the building of houses and other infrastructure; influencing economic progress. Rapid population growth and urbanization have created an increasing demand for residential, commercial, industrial, public buildings and other infrastructure in South Africa. For this increasing demand, bricks are the most productive construction materials for both urban and rural areas. Brick making sector influences the country's economic growth by contributing to the country's gross domestic product (GDP) and also generating employment for local communities.

SA Block (Pty) Ltd, a subsidiary of Afrimat Limited intends to expand its production capacity on a new premises closer to its customer base. SA Block is a brick making plant which mainly focuses on the production of SA Block bricks. SA Block is a product derived from the burning of coal and the bricks made of clinker are considered to be light in weight when compared to regular cement bricks. SA Block produces SABS approved bricks that are mainly used for the building of housing (residential and commercial) developments.

SA Block has received permission from Glen Douglas mine, another subsidiary of Afrimat Limited located on the Remaining Extent of Portion 3 of the farm Witkoppie 373 IR, to erect a brick making plant on their property, outside their mining area. SA Block will erect an automated brick manufacturing plant under 1500m² roof and have a small storage yard (+-5000m²) outside with temporary building structures (100m²) as offices, bathroom facilities and stores.

There is also a possibility to expand the operation in future to include a ready-mix concrete batching facility as well as a basic asphalt plant at a later stage. SA Block wants to grow in the business not only for the increase of production and income, but to create sustainable job opportunities to increase to the GDP of the Midvaal Local Municipality. They want to sell their bricks at market related prices to contribute to the economic upliftment of the Midvaal community.

Clinker is a brick with a vitrified surface and consists mainly of the stony residue from burnt coal. Clinkers hardly take up water and are thus very durable. The bricks will be made of the old clinker and cement mixed with water. The cement bricks will be produced in two different sizes which will be called stock bricks and block bricks. They are made by mixing cement and water. Cement bricks are mainly used for the building of houses, but is not as cost effective and attractive as a clinker. When the cement bricks are used for building purposes they should be plastered as cement walls are prone to crack in severe weather conditions.

Project Location

The proposed Midvaal Block Manufacturing plant will be located on the Remaining Extent of Portion 3 of the farm Witkoppie 373 IR. The study area is situated along Bokmakiere Road at approximately 0.6 km southwest of Witkopdorp (Daleside), and approximately 2.5 km northeast of Highbury. The study area is located approximately 1 km east of the R59 Provincial Route and 0.8 km southwest of the R557 Regional Route. The study area neighbours the northern section of the Glen Douglas Dolomite Mine.

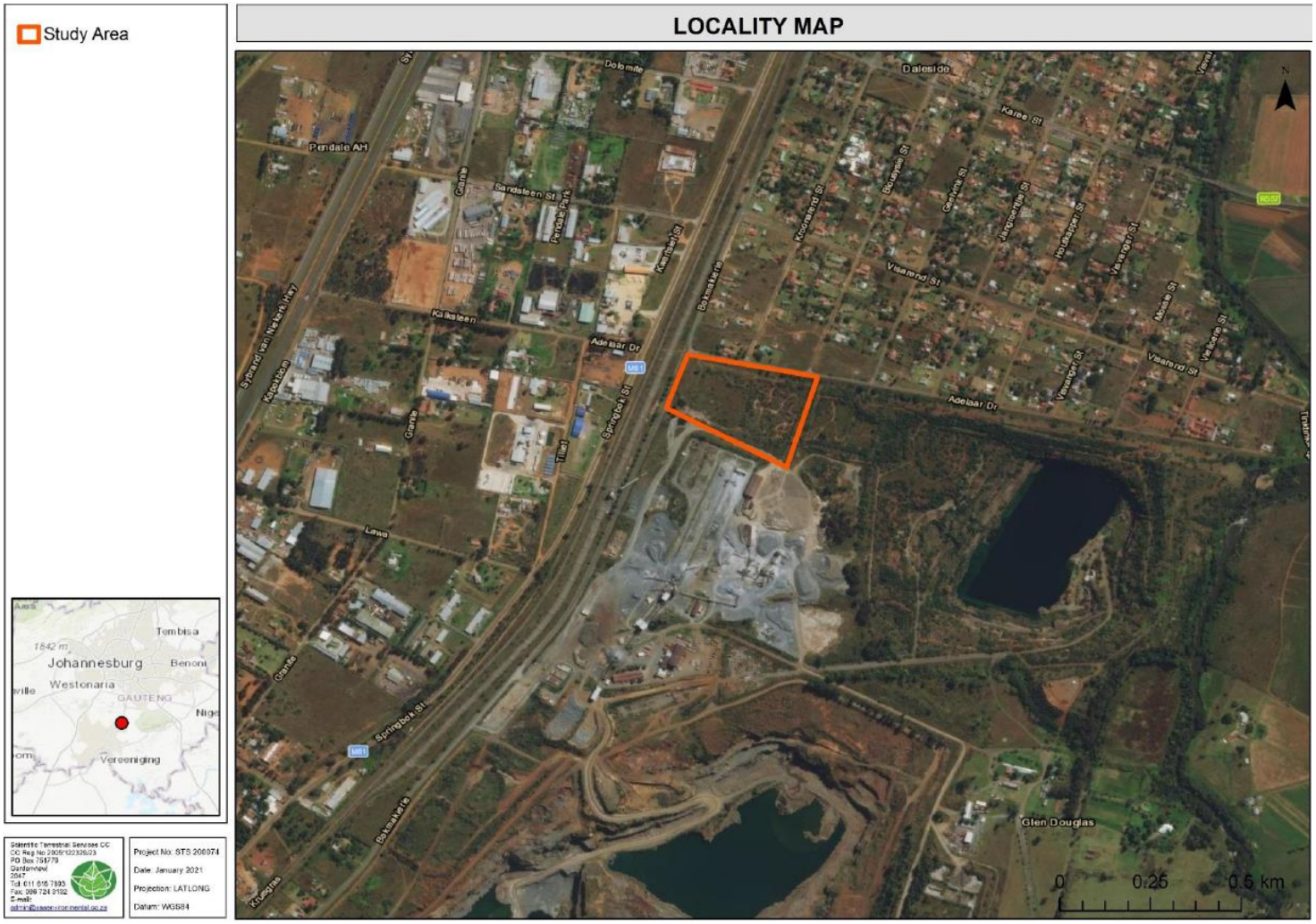

Figure 1: Aerial view of the proposed site in relation to surrounding area

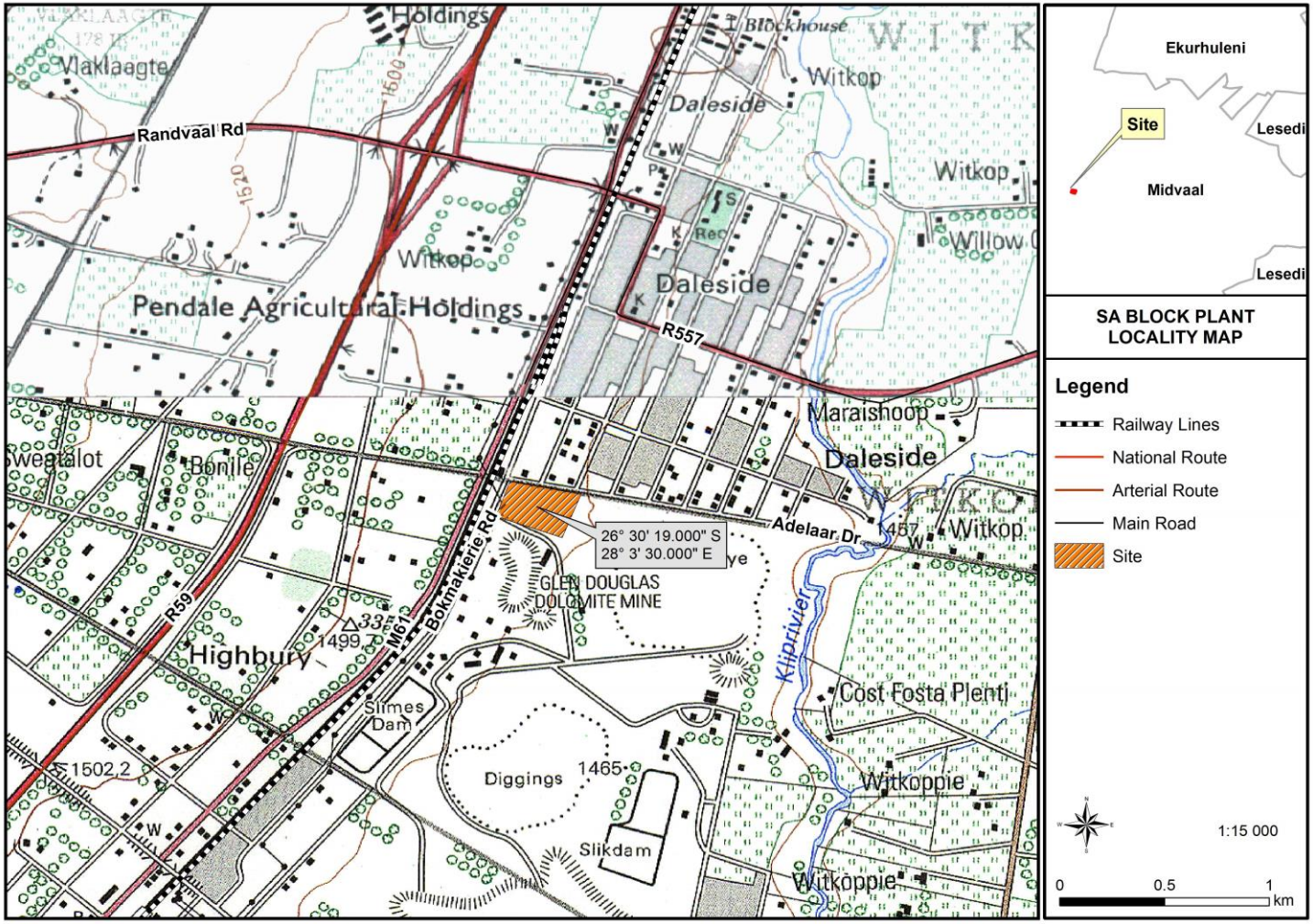

Figure 2: Locality Map illustrating the location of the project site within Midvaal Brick Manufacturing Facility

1.1 Purpose and Objectives of the Environmental Management Programe (EMPr)

The purpose of this EMPr is to provide an easily interpreted reference document that ensures that the project environmental commitments, safeguards and mitigation measures from the environmental planning documents, project approvals, and Scope of Works are implemented. It aims to minimise impacts associated with the construction phase and operational of the proposed Midvaal Brick Manufacturing Facility, on the environment are kept to a minimum. This includes ensuring that the mitigation measures described in the EIA Report by specialists are implemented, to ensure continued monitoring of the construction and operational phases and to ensure the involvement of interested and affected parties (IAPs) in a meaningful way.

This EMPr should be used as working document and is recommended to be always made available on the brick manufacturing site. The stipulations and provisions of this report should be conveyed to and familiarised by the site senior personnel (site manager) and workers responsible throughout the operation.

The key objectives for the EMPr are:

- To state standards, guidelines and ensure compliance required to be achieved in terms of environmental legislations;
- To assign clear accountability and responsibility for environmental protection and social responsibility to management and employees;
- To facilitate environmental and social planning throughout the project life cycle;
- To provide a process for achieving targeted performance levels;
- To provide appropriate and sufficient resources, including training, to achieve targeted performance levels on an on-going basis;
- To outline mitigation measures and environmental specifications which are required to be implemented for all phases of the project in order to minimise the extent of environmental impacts, and to manage environmental impacts associated with the proposed project; and
- To prevent long-term or permanent environmental degradation;

The document should, therefore, be seen as a guideline that will assist in minimizing the potential environmental impact of activities to be undertaken in the implementation of the proposed project.

1.2 Details of the Environmental Management Practitioner

Table 1: Details of Environmental Assessment Practitioner (EAP)

Consultant:	Afrimat (Pty) Ltd
Contact Person:	Ntsanko Ndlovu
Postal Address	PO Box 768 Bellville Western Cape 7535
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E-mail:	ntsanko.ndlovu@afrimat.co.za
Expertise:	Ntsanko has been assigned as the lead Environmental Practitioner to undertake the necessary environmental authorisation process. Ms Ntsanko Ndlovu has been assigned as the lead Environmental Practitioner to undertake the necessary environmental authorisation process. Ntsanko is a certified Environmental Assessment Practitioner (EAPASA – 2019/1335 and Pri.Sci.Nat (127870) holds a Masters degree in Environmental Management from North-West University with over 11 years of professional experience as an environmentalist. Ntsanko is currently Senior Environmental Specialist based at Afrimat. She has a wealth of experience in managing Environmental Impact Assessments (EIAs) with the required Public Participation Process (PPP), carrying out environmental audits and conducting environmental awareness, which she gained through the years. EAP's qualifications are attached as Appendix A of this report.

The EAP who prepared this EMPr is employed by Afrimat (Pty) Ltd and is considered to have vested interests on the proposed project considering that Clinker Supplies is subsidiary to Afrimat. As required by Regulation 13 (2) and 3 of the NEMA EIA Regulatins 2014, an independent external EAP was appointed to review all the EIA process including this reviewing EMPr. The details of the ecternal EAP are indicated below.

Table 2: Details of independent Reviewer

Consultant:	MPG Environmental Consultant Pty Ltd
Contact Person:	Anne-Mari White
Telephone:	060 878 1591
E-mail:	enviro@mpgenviro.co.za
Expertise:	Ms. White's consulting experience includes basic environmental impact assessments (BAs), environmental impact assessments (EIAs), environmental compliance, public participation processes (PPPs), environmental management plans (EMPs), water licensing and authorisations and waste licence applications for various projects, ranging from abattoirs and township establishments to power station developments. Anne-Mari completed her Bachelor of Science in Environmental Management at the University of South Africa (UNISA) in 2007. In addition, she has done short courses in soil classifications and wetland delineations at Terrasoil; geographic information systems (GIS) at the University of KwaZulu- Natal (UKZN) and EIAs at the North-West University (NWU) in South Africa. She is also registered as a natural scientist with the South African Council for Scientific Natural Professionals (SACNASP). Anne-Mari is also registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA)and is a member of the International Association for Impact Assessments (IAIA).

2. LEGAL FRAMEWORK

Several laws and regulations apply to the protection of the environment and contain environmental principles and standards that need to be applied and permits and licenses that need to be obtained. This EMPr will be subject to regulatory control under a range of State, Provincial and Local regulations. Such legislation largely embraces pollution prevention, resource use and conservation, and socio cultural (heritage) protection. This chapter reviews legislation pertaining to the proposed Midvaal Brick Manufacturing Facility.

According to Section 2 (1, 2 & 3) of the National Environmental Management Act No. 107 of 1998 (NEMA), all organs of state have to apply certain principles set out in NEMA when taking decisions that may significantly affect the environment. The key principles of this Act include that all "actions" that they approve must be economically, socially and environmentally sustainable. It further states that "people and their needs" must be at the forefront of "its concern" and their interests must be served equitably. The intent of this EMPr is to ensure that the developer conducts all its activities related to the construction and operation of this proposed Midvaal Brick Manufacturing Facility in accordance with the provisions of the NEMA, and has taken into account the provisions of the Constitution and the principles of Integrated Environmental Management.

The following is a summary of the environmental legislation and standards applicable to the proposed project.

Table 3: Legislation applicable to the project

LEGISLATION	SECTION	DESCRIPTION RELATING TO THE PROPOSED PROJECT
The Constitution (No 108 of 1996)	Chapter 2	Bill of Rights.
	Section 24	Environmental rights.
National Environmental Management Act (No 107 of 1998 [as amended])	Section 24	Provides for the prohibition, restriction and control of activities which are likely to have a detrimental effect on the environment.
	Section 28	The developer has a general duty to care for the environment and to institute such measures as may be needed to demonstrate such care.
National Environmental Management: Waste Act (No. 59 of 2008)		Waste management measures and the remediation of contaminated land.
Environment Conservation Act (No 73 of 1989) and regulations	Sections 19 and 19A	Prevention of littering by employees and subcontractors during construction and the operational phases of the proposed project

National Environmental Management Biodiversity Act (Act No. 10 of 2004)		The management, protection and conservation of South Africa's biodiversity and it's components
National Environmental Management: Air Quality Act (No 39 of 2004)	Section 32	Control of dust
	Section 34	Control of noise
	Section 35	Control of offensive odours
National Water Act (No 36 of 1998) and regulations	Section 19	Prevention and remedying the effects of pollution
	Section 20	Control of emergency incidents
NEMWA: National Norms and Standards for the Storage of Waste		Provides standards for the location, construction and design as well as the operation of waste management facilities
Hazardous Substances Act (No 15 of 1973) and regulations		The storage and/or use of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances, and for the control of certain electronic products and radioactive material.
Occupational Health and Safety Act (No 85 of 1993)	Section 8 and 9	Protection of health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work, against hazards to health and safety arising out of or in connection with the activities of persons at work.
	Section 9	General duties of employers and self employed persons to persons other than their employees
Occupational Health and Safety Act- Major Hazard Installation Regulations (GN R692, July 2001)	Sections 5 and 6	A risk assessment must be conducted at intervals not exceeding five years and establish an on-site emergency plan to be followed on site
National Heritage Resources Act (No 25 of 1999) and regulations	Section 34	No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.
	Section 35	No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or

		otherwise disturb any archaeological or palaeontological site.
	Section 36	No person may, without a permit issued by the South African Heritage Resource Agency (SAHRA) or a provincial heritage resources authority destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. "Grave" is widely defined in the Act to include the contents, headstone or other marker of such a place, and any other structure on or associated with such place.
	Section 38	This section provides for Heritage Impact Assessments (HIAs) of proposed developments

3. PHASES OF THE PROJECT

The point of departure for this EMPr is to take a pro-active route by addressing potential problems before they occur. This should limit corrective measures needed during the construction and operational phases of the development. Additional mitigation will be included throughout the project‟s various phases, as required and if necessary.

The EMPr deals with the following phases as detailed below:

3.1 The Pre construction, Planning and Design Phase

The EMPr offers an ideal opportunity to incorporate pro-active environmental management measures with the goal of attaining sustainable development.

Pro-active environmental measures minimize the chance of impacts taking place during the construction and operational phase. There is still the chance of accidental impacts taking place; however, through the incorporation of contingency plans (e.g. this EMPr) during the planning phase, the necessary corrective action can be taken to further limit potential impacts.

3.2. The Construction Phase

The bulk of the impacts during this phase will have immediate effect (e.g. noise, dust). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from the developer.

3.3 Operational Phase

The most important part of the operational phase will be to ensure that the site is meticulously maintained and that the operations are carefully monitored. The applicant will remain overall responsible for the environmental performance of the site and must be aware of the legal requirements and obligations. The applicant must also be aware of the legal action that can be taken against him as a person with regards to negligence leading to environmental pollution.

The developer must implement an operational and maintenance management plan which must include:

- Access management and control;
- Energy management and monitoring;

- Water management and monitoring;
- Sewerage management; and
- Fire Management.

3.4. The Decommissioning Phase

The decommissioning phase would entail the dismantling of the brick manufacturing facility and the associated infrastructure as well as rehabilitating the land by restoring the land impacted by the operational phase as close as possible back to its original state. This process will mainly on rectifying the negative impacts that have been caused during construction by the removing pollution or contaminants and other dangerous substances from groundwater, sediment, or surface water and improvement of the soil. Some mitigation measures listed in the construction and operational phase include immediate rehabilitation measures on disturbed areas, therefore this phase is interlinked with the construction and operational phase.

4. MANAGEMENT AND MONITORING PROCEDURES

4.1 Organisational Structure and Responsibility

4.1.1 SA Block's Responsibility for EMPr Implementation

SA Block remains ultimately responsible for ensuring that the development is implemented according to the requirements of the EMPr. Although SA Block is required to appoint specific role players to perform functions on his/her behalf, this responsibility is delegated. The developer is responsible for ensuring that sufficient resources (time, financial, human, equipment, etc.) are available to the other role players (e.g. the ECO and contractor) to efficiently perform their tasks in terms of the EMPr. The developer is liable for restoring the environment in the event of negligence leading to damage to the environment.

The developer must ensure that the EMPr is included in the tender documentation so that the contractor who is appointed is bound to the conditions of the EMPr. When adjudicating relevant tenders, SA Block will ensure that contractors have made appropriate allowance for the management of environmental matters. SA Block will include adherence to the EMPr as a contractual condition in all agreements with contractors. To this end, SA Block will undertake the following:

- Educate its personnel, contractors and visitors with regard to the SHE requirements applicable in general to the proposed Site;
- Provide professional staff to give effect to its safety, health and environmental management commitments;
- Appoint a competent ECO, who might be the Compliance or SHE manager, prior to the commencement of construction.
- Undertake monthly internal EMPr compliance inspections by the ECO and annual audits by a suitably qualified and competent auditor during the operational phase. These inspections and audits will include all activities associated with the brick manufacturing site in its entirety, including activities undertaken by SA Block's contractors and agents;
- Undertake internal EMP compliance inspections by the ECO at weekly intervals and external audits by a suitably qualified and competent independent auditor at three-monthly intervals during the construction phase and decommissioning phase; and
- Monitor, evaluate and report performance in safety, health and environmental protection to the relevant management level within SA Block.

4.1.2 Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) is appointed by the developer as an independent monitor of the implementation of the EMPr and ensuring compliance with the Environmental Authorisation (EA) and EMPr. He/she must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. The ECO must attend relevant project meetings, conduct inspections to assess compliance with the EMPr and be responsible for providing feedback on potential environmental problems associated with the development. Considering the nature of the baseline environment and the proposed activities, the ECO does not have to be based on site on a full time basis. The ECO can visit the site on weekly or bi-weekly basis and/or when required to be on site. In addition, the ECO is responsible for:

- Liaison with relevant authorities;
- Liaison with contractors regarding environmental management;
- Undertaking routine monitoring and appointing a competent person/institution to be responsible for specialist monitoring, if necessary;
- Take appropriate action if the specifications contained in the EMPr are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible;
- Review and approve construction methods (where it could result in environmental impacts), with input from the Site Manager where necessary;
- Ensure that activities on site comply with all relevant environmental legislation;
- Order the removal from the construction site of any person(s) and/or equipment in contravention of the specifications of the EMPr; and
- Report any non-compliance or remedial measures that need to be applied to the appropriate environmental authorities, in line with the requirements of the Environmental Authorisation.

The ECO has the right to enter the site and undertake monitoring and auditing at any time, subject to compliance with health and safety requirements applicable to the site (e.g. wearing of safety boots, reflective vest and protective head gear).

4.1.3 The Contractor (including sub-contractors)

The contractor/s appointed for the construction of the brick manufacturing facility and infrastructure associated with Midvaal Brick Manufacturing Facility project will receive a copy of the EMP at the time of tender. Contractors shall familiarise themselves with the EMP mitigation

measures for the site and ensure that contracting prices allow for environmental management costs.

Upon appointment it will be the responsibility of SA Block to ensure that each contractor has a copy of the EMPr in their place of work. It will also be their responsibility to ensure that all staff are aware of the measures applicable to their area of work. In addition, the contractor/s shall be responsible for:

- Complying with the environmental management specifications;
- Adhering to any instructions issued by the Project Manager;
- Keep record of all incidents that have occurred during construction period. This should be available during audits;
- Maintaining a public complaints register;
- The contractor shall arrange for the site induction on the Environmental Awareness issues before commencement of the project;
- Conduct environmental training and awareness to employees;
- Records of all, environmental training sessions, including names, dates and the information presented should be kept by the contractor; and
- Arrange for all employees and those of subcontractors to receive training before the commencement of construction in order.

4.1.4 Health and Safety Officer

The applicant currently outsources this responsibility from outside consultants for all its operating sites and will do the same for this development. The Health and Safety Officer shall:

- Conduct regular site inspections, in conjunction with the Site Manager, to ensure that all staff and appointed contractor/s are compliant with the EMPr in terms of the management measures outlined in the document. Inspections must take place monthly and a copy of the inspection checklist must be kept on file;
- Keep a register of all incidents (fuel spills, complaints, injuries, legal transgressions etc.) and of all documentation related to the EMPr; and
- Ensure that all personnel are trained in accordance with the requirements outlined in the EMPr.

4.2 EMPr Training and Awareness

SA Block to inform all employees of any environmental risk which may result for the works, and risks that must be dealt with in order to avoid pollution of the degradation of the environment

through the implementation of the company (Afrimat) Environmental Policy. Training needs should be identified based on the available and existing capacity of site personnel (including the Contractors and Sub-contractors) to undertake the required EMPr management actions and monitoring activities. It is vital that all personnel are adequately trained to perform their designated tasks to an acceptable standard.

The environmental training is aimed at:

- Promoting environmental awareness;
- Informing the employees of all environmental procedures, policies and programmes applicable;
- Providing generic training on the implementation of environmental management specifications; and
- Providing job-specific environmental training in order to understand the key environmental features of the brick manufacturing site and the surrounding environment.

The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of GDARD) and Midvaal Local Municipality's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures; and
- The mitigation measures required to be implemented when carrying out their work activities.

In the case of permanent staff, the site manager shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the site manager shall inform the supervisor when and how he/she intends concluding his environmental training obligations.

4.3 Monitoring Plan

SA Block will need to establish a monitoring plan not only to ensure compliance with the EMPr through the instruction specifications, but also to monitor any environmental issues and

impacts which have not been accounted for in the EMPr that are, or could result in significant environmental impacts for which corrective action is required. SA Block will cause and or carry out the internal audits.

This will be determined from applicable permits and authorisations from authorities. The Project Manager will ensure that the monitoring is carried out. The monitoring plan must state:

- Who is responsible for what monitoring tasks;
- When the monitoring must take place;
- How the monitoring must take place;
- Frequency of monitoring required;
- How the monitoring results will be distributed and communicated; and
- What avenues of corrective actions will be taken should EMP stipulations be found non-compliant

4.4 Reporting Procedures

A dedicated file will be established by the Site Manager for the development to contain all documentation pertaining to environmental management of the works.

The following documentation must be kept on site in order to record compliance with the EMPr:

- Record of Complaints;
- Monitoring Results;
- Non-conformance Reports;
- Written Corrective Action Instructions; and
- Notification of Emergencies and Incidents.

4.4.1 Complaints Procedures

A complaint and environmental incident registers will be kept, including the actions they take in response to these complaints. All complaints must be reported to the relevant departments.

A register of public complaints will be kept by the engineer and the ECO. This register will be a separate file containing the following information where it has been supplied by the complaints:

- Name, address and contact telephone number;
- Nature and the description of the complaints;
- Date and time of the complaints; and
- How the complaints were resolved or followed up.

4.5 Environmental Incidents and Breaches of EMPr Conditions

The designated person will bring to the attention of the Site Manager any significant environmental incidents or breaches of the conditions of the EMPr, within 24 hours of occurrence of such event. The Site Manager will notify the controlling authority within 48 hours of such an incident, if the environmental incident constitutes a reportable breach of any permit or licence condition.

The designated person will monitor employees and contractor's adherence to the EMP by conducting regular EMPr compliance audits throughout each phase of the operation and will issue the contractor with a notice of non-compliance whenever transgressions are observed. The designated person will record the nature and magnitude of the non-compliance in a register, the actions taken to rectify the non-compliance, the actions taken to mitigate its effects and the results of the actions. The contractor should act immediately when a notice of non-compliance is received and implement the agreed corrective action.

5. ENVIRONMENTAL MANAGEMENT PROGRAMME

The following tables form the core of this EMPr for the planning, construction and operational phases of the development. These tables should be used as checklists on site during the construction and operational phases. Construction phase mitigation measures are to be implemented during the construction of the proposed brick manufacturing facility and infrastructure associated with the Midvaal Brick Manufacturing Facility Project. Operation mitigation measures are to be implemented during the brick manufacturing process after the required site infrastructure has been established. The operational phase is estimated to be between 10 and 15 years (market dependent). Compliance with this EMPr must be audited monthly during the construction phase. This must be followed up with annual audits throughout the operational phase.

The potential impacts and mitigation measures of the proposed development were identified through a site visit, the Environmental Assessment Practitioner's experience and expertise in the field and specialist studies reports.

ENVIRONMENTAL MANAGEMENT PROGRAMME

Table 4: Impacts to be mitigated in their respective phases

PLANNING PHASE		
Activity /Issue	**Mitigation Measures**	**Responsible Person**
Appointment of an ECO	• The Developer must appoint an Environmental Control Officer (ECO) who must monitor the compliance with the EMPr throughout the life of the project.	Developer
EMPr	• The developer must provide the contractor and sub-contractors with a copy of the EMPr. • This EMPr must be made binding to the site manager as well as individual sub-contractors and should be included in tender documentation for the construction contract	Developer, ECO
Flow of information	• Adjacent landowners should be informed one month in advance prior to the commencement of construction and operation activities commencing in vicinity of their properties • Legitimate concerns of the interested and affected parties must be considered and addressed	Developer, ECO
Environmental incidents	• The developer must take corrective action to mitigate an incident appropriate to the nature and scale of the incident and must also rehabilitate any residual environmental damage caused by the incident or by the mitigation measures themselves. • In case of pollution incidents (e.g. petrol, diesel or oil or any other hazardous solvents into the ground), GDARD and Department of Water and Sanitation should be notified within 24 hours of occurrence. However, any pollution which may emanate from the activity in the future will still be the responsibility of the applicant o This is a requirement in terms of section 30 of the NEMA, 1998 that pertains to the control of incidents which include the reporting, and the immediate containment, clean-up and remediation of the affected area. All necessary documentation must be completed and submitted to the relevant authorities within the prescribed	Developer, ECO

	timeframes. Please incorporate this requirement in the EMPr.	
Vegetation management	• Minimise loss of natural vegetation where possible through planning and where necessary by incorporating the sensitivity of the biodiversity report as well as any other specialist studies; • Prior to the commencement of construction activities, an AIP Management/Control Plan should be compiled for implementation: – Removal of alien invasive species should preferably commence during the pre-construction phase and continue throughout the construction and operational phases. AIPs should be cleared within the study area before any vegetation clearing activities commence, thereby ensuring that no AIP propagules are spread, or soils contaminated with AIP seeds during the construction phase; and – An AIP Management/Control Plan should be implemented by a qualified professional. No uncertified chemicals may be used for chemical control of AIPs. Only trained professionals must be allowed to administer chemical control. • All potential floral SCC, if identified during the pre-construction phase, that may be affected by the construction activities, must be marked and where possible, relocated to suitable habitat surrounding the disturbance footprint. Consultation with GDARD will be required to determine whether a permit process needs to be followed.	
CONSTRUCTION PHASE		
Clearing and removal of vegetation	**<u>Development footprint</u>** • The construction footprint must be kept as small as possible to minimise impact on the surrounding environment (edge effect management); • Removal of vegetation must be restricted to what is absolutely necessary and should remain within the approved development footprint. Where possible/ feasible, any remaining natural areas should be utilised as part of the landscaping of the proposed development; • Clearing of vegetation should take place in a phased manner. This will allow for faunal species within the study area to flee and avoid harm;	ECO

	• Smaller species that are not as readily able to move out of an area ahead of ground clearing activities such as scorpions and reptiles will be less mobile during rainfall events and cold days (winter). As such should any be observed in the construction site during clearing and construction activities, they are to be carefully and safely moved to an area of similar habitat outside of the disturbance footprint should they not self relocate. Construction personnel are to be educated about these species and instructed not to kill them. Smaller scorpion species and harmless reptiles should be carefully relocated by a suitably nominated construction person. For larger venomous snakes, a suitably trained specialist, or on-site personnel, should be contacted to carry out the relocation of the species, should it not move off on its own; • Vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the construction activities. Additional road construction should be limited to what is absolutely necessary, and the footprint thereof kept to a minimal; • No collection of floral SCC must be allowed by construction personnel; • No hunting or trapping of faunal species is to be allowed by construction personnel; • Informal fires by construction personnel should be prohibited, and no uncontrolled fires whatsoever should be allowed; • Care should be taken during the construction and operation of the proposed development to limit edge effects to surrounding natural habitat. This can be achieved by: • Demarcating all footprint areas during construction activities; – No construction rubble or cleared alien invasive species are to be disposed of outside of demarcated areas, and should be taken to a registered waste disposal facility; – All soils compacted as a result of construction activities should be ripped and profiled and reseeded; – Manage the spread of AIP species, which may affect remaining natural habitat within surrounding areas. Specific mention in this regard is made to Category 1b and Category 2 species identified within the development footprint areas (refer to Appendix F of this report); and • Appropriate sanitary facilities must be provided during the construction of the development and must be removed to an appropriate waste disposal site; • No dumping of litter, rubble or cleared vegetation on site should be allowed. Infrastructure and rubble removed because of the construction activities should be	

	disposed of at an appropriate registered dump site away from the development footprint. No temporary dump sites should be allowed in areas with natural vegetation. It is advised that waste disposal containers and bins be provided during the construction phase for all construction rubble and general waste. Vegetation cuttings must be carefully collected and disposed of at a separate waste facility; • If any spills occur, they should be immediately cleaned up to avoid soil contamination that can hinder floral rehabilitation later down the line. Spill kits should be kept on-site within workshops. In the event of a breakdown, maintenance of vehicles must take place with care, and the recollection of spillage should be practised, preventing the ingress of hydrocarbons into the topsoil; and • Upon completion of construction activities, it must be ensured that no bare areas remain, and that indigenous species be used to revegetate the disturbed area. **Floral and Faunal SCC** • The relocation success of floral SCC should be monitored during the construction phase to ensure immediate actions can be taken if it becomes evident that relocation is not successful; • No collection of floral SCC or medicinal floral species must be allowed by construction personnel; • Edge effect control needs to be implemented to prevent further degradation and potential loss of floral and faunal habitat for SCC outside of the proposed development footprint area; • It is recommended that the perimeter fence allows for movement of small mammals, such as palisade fencing, as opposed to solid constructions such as walls. Should the perimeter be walled in, it is recommended that small opening be left to allow for continuous movement of small mammal species. Such openings must be continuously monitored and cleared of debris to ensure continued movement is possible; and • Should the presence of any faunal SCC be noted, or their breeding sites be located, within the development footprint a suitably qualified specialist should be consulted on the best way to proceed.	

Exposure to erosion	• Do not allow erosion to develop on a large scale before taking action. • Where possible, no construction / activities should be undertaken within the moist grasslands. The extent of wetland conditions should be verified by a wetland specialist and no activities should take place within these areas without that a Water Use License was granted by the Department of Water Affairs (DWA) for these activities. • Make use of existing roads and tracks where feasible, rather than creating new routes through vegetated areas. • Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area (DWAF, 2005). • Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining vegetation cover. The grassland can be removed as sods and re-established after construction is completed. • Colonisation of the disturbed areas by plants species from the surrounding natural vegetation must be monitored to ensure that vegetation cover is sufficient within one growing season. If not, then the areas need to be rehabilitated with a grass seed mix containing species that naturally occur within the study area. • Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.	ECO
Potential increase in invasive vegetation	• Edge effects arising from the proposed development, such as erosion and alien plant species proliferation, which may affect adjacent natural areas, need to be strictly managed. Specific mention in this regard is made of Category 1b AIP species (as listed in the NEMBA Alien species lists, 2020), in line with the NEMBA Alien and Invasive Species Regulations (2014) (Appendix F of this report); • Ongoing alien and invasive plant monitoring and clearing/control should take place throughout the construction and operational phase of the development, and a buffer surrounding the study area (i.e. along the fence line) should be regularly checked for AIP proliferation and to prevent spread into surrounding natural areas; and • Alien vegetation that is removed must not be allowed to lay on unprotected ground as seeds might disperse upon it. All cleared plant material to be disposed of at a licensed waste facility which complies with legal standards. •	ECO

Soil compaction	• Vehicles and machinery may not veer from the dedicated roads. • Once construction is complete, obsolete roads should be obliterated by breaking the surface crust and erecting earth embankments to prevent erosion, while the natural species composition should be re-established.	ECO
Disturbance / impacts to moist grassland, loss of stabilising vegetation	• Project engineer should compile a method statement, outlining the construction methodology of the access road. The required mitigation measures to avoid the impacts on the moist grasslands should be contained within the method statement. The method statement must be approved by the ECO and be available on site for reference purposes. • Make use of existing roads and tracks where feasible, rather than creating new routes through moist grassland areas. • Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover. • An ecologically sound, storm water management plan must be implemented during construction and ensure that the stormwater management of the completed development is adequate to prevent deterioration of the moist grasslands and the watercourse. • Do not allow stormwater to be canalised. • Prevent contamination of rainwater on construction camps and sites. • Place and maintain erosion control barriers as appropriate to prevent sedimentation into the watercourse and moist grasslands. • Trucks and equipment should only be washed in dedicated areas and the dirty water is not allowed to discharge into the watercourse or surrounding natural vegetation.	Site Manager, ECO
Fauna Disturbance / Persecution	• Existing road infrastructure should be utilized during construction. • Construction personnel should be informed of the Animal Protection Act no. 71 of 1962 and encouraged not to harm any wildlife. • Construction activities should be restricted to daylight hours to prevent any disturbance to fauna caused by floodlights or construction / operational noises.	Site manager, ECO

Storage and Handling of hazardous substances including oil	• All hazardous products to be stored in a concrete floor that is bunded/roofed store house. • All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the contractor to, and used or worn by the staff whose duty it is to manage and maintain the supplier's plant, machinery and equipment. • Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. • The contractor shall provide proof that relevant authorisation to store such substances has been obtained from the relevant authority. • In addition, hazard signs indicating the nature of the stored materials shall be clearly displayed on the storage facility or containment structure. • The loss of oils and fuel onto the ground must be limited and contained. Where oils have leaked onto the soil, this soil must be removed and disposed of at an approved dumping site at the end of the construction phase or as required by the ECO. • In the event of a spillage, the contractor is to appoint someone to clean up immediately. Spillage must be reported to Department of Water Affairs (DWA).	Health & Safety Officer, ECO
Top soil management	• All topsoil must be removed and stockpiled close to the site. However, the use of topsoil for rehabilitation contaminated by the seed of alien vegetation should not be permitted unless a programme to germinate the seed and eradicate the seedlings is drawn up and approved, or some other mitigatory feature is found. This should be approved by the ECO. • Stock piles should not be higher than 2m to avoid compaction. • Single handling is recommended. • Dust suppression is necessary for stockpiles older than a month – with either water or a	Contractor, ECO

	biodegradable chemical binding agent. • Backfill may require contouring to ensure that it blends in with the surrounding environment. • Remediated slopes should be graded to preferably 1:2 • Slopes can then be capped with topsoil. This requires a minimum layer of 100 mm in most areas. • Disturbed surfaces to be rehabilitated must be ripped, and the area must be backfilled with overburden.	
Removal of topsoil	• Topsoil must be stripped aside and be used for rehabilitation of trenches • All areas susceptible to erosion must be installed with temporary and permanent diversion channels and berms to prevent concentration of surface water and scouring of slopes and banks, thereby countering erosion • The contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site used during the contract period. This shall include existing spoil sites that are being re-entered. • Before spoil sites may be used, proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the Engineer for approval. • The affected landowner must be consulted and must provide consent for the location of these spoil sites on his property.	Contractor, ECO
Crime, safety and security	• Security fence is to be inspected continuously to ensure no illegal entry points are created. • Appropriate protective clothing must be used by labourers at all times of work. • Opened trenches and pits must remain demarcated to avoid injuries to employees. • The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act, 1993 (Act No.85 of 1993) and the National Building Regulations. • The contractor must supply his own security arrangements for the construction camp within the site. • Ensure the contacts details of the police or security company and ambulance services are available on the site.	Contractor, Health & Safety Officer, ECO

	• Ensure that the handling of equipments and materials is supervised and adequately instructed. • Limit access to the construction crew camp only to the workforce. • Do not allow the movement of public within the development site by posting notices at the entrance gates, and where necessary on the boundary fence. • Appropriate notification signs must be erected, warning the residents and visitors about the hazards around the construction site and presence of heavy vehicles	
Noise pollution	• The development must comply with the local by-laws regarding health and noise. • Construction and related machinery and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g. installed exhaust mufflers. • Switching off equipment when not in use. • Construction equipment may only operate between the hours of 08H00 and 17H00 weekdays and Saturdays. Operation is prohibited on Sundays and public holidays. • Equipment with lower sound power levels would be used in preference to noisier equipment. • The on-site road network will be well maintained to limit body noise from empty trucks travelling on internal roads.	Contractor, ECO, Site Manager
Dust control	• Dust production must be controlled by regular watering of roads and works area, should the need arise. • Care must be taken during suppression of dust, that excessive dampening does not occur, thus resulting in mud which may hinder the flow of traffic. • Points of ingress and egress onto the site must be regularly cleaned for dust and mud. • Vehicles to be used during the construction phase are to be kept in good working condition so as not to be the source of excessive fumes and nuisance. • All vehicles transporting material that can be blown off (e.g. soil, rubble etc.) must be covered with a tarpaulin, and speed limits of 30 km/h must be adhered to.	Contractor, ECO

Waste Management	• No illegal dumping of waste must be allowed; • All personnel shall be instructed to dispose of all waste in the proper manner. • Solid waste shall be stored in a designated area covered, tip proof metal drums for collection and disposal. • A refuse control system shall be established for the collection and removal of refuse • Disposal of solid waste shall be at a licensed landfill site and disposal slips must be kept onsite • No waste shall be burned at the site office, or anywhere else on the site • Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. • Chemical containers and packaging brought onto the site must be removed for disposal at a suitable site. • The contractor should provide ablution facilities for employees on site, preferably chemical toilets. • The contents of chemical toilets will be removed to an approved disposal site – no discharge into the environment or burying of sewage will be allowed	Contractor,ECO
OPERTAIONAL PHASE		
Erosion and bare soils	• Leave as much natural vegetation intact as possible during construction of the roads. • Do not disturb soil unnecessarily during maintenance or during the operational phase of the brick manufacturing. • Cordon off areas that are under rehabilitation as no-go areas using danger tape and steel droppers. If necessary, these areas should be fenced off to prevent vehicular and pedestrian access. • Monitor rehabilitation of the disturbed areas and ensure that alien invasive species are dealt with in accordance to the Environmental Management Plan. • Workers may not trample natural vegetation and work should be restricted to previously disturbed footprint. In addition, mitigation measures as set out for the construction phase should be adhered to.	ECO, Site Manager

Clearing and removal of vegetation	**Development footprint** • No dumping of litter or garden refuse must be allowed on-site. As such it is advised that vegetation cuttings from landscaped areas be carefully collected and disposed of at a separate waste facility.	ECO, Site Manager
Possible increase in alien and invasive plants	• Edge effects arising from the proposed development, such as erosion and alien plant species proliferation, which may affect adjacent natural areas, need to be strictly managed. Specific mention in this regard is made of Category 1b and Category 2 AIP species (as listed in the NEMBA Alien species lists, 2016 and 2020 from March 2021), in line with the NEMBA Alien and Invasive Species Regulations (2014) (Appendix F of this report). For any activities taking place after 1 March 2021, the Alien and Invasive Species Regulations of 2020 apply; • Ongoing alien and invasive plant monitoring and clearing/control should take place throughout the operational phase, and the project perimeters should be regularly checked for AIP establishment to prevent spread into surrounding natural areas; and • Alien vegetation that is removed must not be allowed to lay on unprotected ground as seeds might disperse upon it. All cleared	ECO
Fauna Disturbance / Persecution	• The development area should be re-habilitated and re-vegetated as soon as possible using an appropriate rehabilitation plan which incorporates indigenous plant species. • A management plan to prevent the staff from harassing or poaching the faunal species should be developed and implemented. • Construction and operation activities should be restricted to daylight hours to prevent any disturbance to fauna such as floodlights or construction / operational noises.	Site Manager, ECO
Soil and Groundwater Contamination	• Store all hydrocarbons on a hardened surface to contain spillages • Strict procedures for hydrocarbon management of the site must be developed and adhered to. • The oil/spill/leak must be cleaned immediately and any contaminated soil must be removed and disposed off through a recognisable waste disposal method	Site Manager, ECO

	• Used oil must be disposed off in accordance with the correct procedures. • All equipment that has the potential for spillages or leakages shall be equipped with drip-trays. • Ensure that care is taken to ensure that spillages of oils and effluent are limited during maintenance. In the event of a spill/leak, the source of the spill or leak must be identified and correctly addressed.	
Noise	• Barrier must be situated between the main noise source noise sensitive receivers, • Brick manufacturing machinery and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g. installed exhaust mufflers. • Switching off equipment when not in use. • Put up barriers around fixed noise producing sources such as generators, pump stations and crushers • Barriers should be installed between the noise source and sensitive noise receptor, as close to the noise source as possible. • All employees and contractors should be instructed to avoid the use of engine compression brakes when approaching the operational area entrance or driving through or in the vicinity of the adjacent town. • All access roads will be signposted and speed limited to minimise transport noise. • Equipment with lower sound power levels should be used in preference to noisier equipment. • All equipment used onsite should be regularly serviced to ensure the sound power levels remain at or below the levels used in the modelling to assess generated noise levels and compliance with the criteria. • The on-site road network should be continuously well maintained to limit body noise from empty trucks travelling on internal roads.	Site Manager, ECO

Crime, safety and security	• Emergency contact details for the police, Security Company, ambulance and fire department must be readily available onsite • Emergency facilities must be available and adequately supplied for use by staff and customers. • Ensure that only suitably qualified personnel use vehicles and machineries • Ensure that the handling of equipment and materials is supervised and adequately instructed. • Security fence is to be inspected continuously to ensure no illegal entry points are created. • Limit access to the site only to the workforce. • Do not allow the movement of public within the development site by posting notices at the entrance gates, and where necessary on the boundary fence. • Appropriate notification signs must be erected, warning the residents and visitors about the hazards around the site and presence of heavy vehicles. • Ensure that PPE is always worn on site. • Ensure that employees are regularly checked for illnesses.	Site Manager, Health and Safety Officer
Dust generation on unpaved roads	• Speed restriction of 40km/h must be implemented for all vehicles inside the yard. • Use of water sprays on unpaved roads • Use of dust control additives on unpaved roads to improve the compaction and stability of the road	Site Manager, ECO
Windblown dust emissions	• Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. • Covering of surface with less erodible aggregate material • Re vegetation of open areas unused areas	Site Manager, ECO

Waste management: –	• Ensure that no refuse waste is burned on the premises or on surrounding premises. No fires will be allowed on site. • Waste generated during and after development should be disposed of in accordance with Council's waste policy. Illegal dumping is punishable By-law • All solid waste must then be disposed of at the nearest licensed landfill and safe disposal certificates obtained. • Locate waste bins and skips throughout the site. • Provision should be made for adequate and proper waste storage facilities and access into the premises, especially if the storage facility is going to be secured under locked gates all the time • Littering will not be permitted on the site and general housekeeping will be enforced. General waste bins must be readily available for litter disposal and general housekeeping. • Separate waste skips/ bins for the different waste streams must be available on site. • The waste containers must be appropriate to the waste type contained therein and where necessary should be lined and covered. • All hazardous material must be carefully stored and then disposed of offsite at the licensed hazardous landfill site	Site Manager, ECO
Storm water management	• Adequate storm water drainage system must be designed and maintained to adequately control the volume, speed, location of runoff, to avoid soil erosion and siltation. • Storm water at the construction crew camps must be managed so as to reduce the silt loads into the ecological environment. Measures must be implemented to distribute storm water as evenly as possible to avoid point sources of erosion; • Construction on steep slopes and in soft or erodible material will require erosion control measures and correct grassing methods; • All construction areas should be suitably top soiled and vegetated as soon as is possible after construction; and • Disturbed surfaces to be rehabilitated must be ripped, and the area must be backfilled with topsoil or overburden.	Site Manager, ECO

	• The design of storm water management systems should be based on Sustainable Urban Drainage System (SUDS) and Water Sensitive Urban Design approaches (WSUDS) which enhance natural drainage through permeable surfacing and which integrate landscaping with storm water in line with best practice storm water management. A Stormwater Management Plan be subject for approval by the JRA prior to the site Development Plan Stage	
Servicing and maintenance of vehicles and machineries on site	• Maintenance/servicing of vehicle and machineries must be conducted on a concrete and roofed floor • Construction vehicles must be well maintained and serviced to minimise leaks and spills. • Drip trays can also be used during the servicing of vehicles and machineries. • Used parts like filters should be contained and disposed of at a site licensed for dumping of these waste products.	Site Manager
Water Management	• Ensure that water service agreement is in order • Water conservation measures such as low flow taps, high pressure hoses, duel flush toilets, water wise gardens, rainwater tanks etc. must be encouraged and implemented. • Every reasonable effort must be made to reduce the long-term water demand. • Environmental training of personnel must include water conservation awareness. • A monthly water monitor program with the aim of ever reducing the water usage must be implemented (records must be kept). •	Site Manager, ECO
Energy Management	• All reasonable steps must be taken to ensure the efficient management of energy. Energy management and conservation measures must be propagated and encouraged. The objective of energy management will be to encourage the conservation of energy, for example: o Install energy-efficient appliances (e.g. a grade one refrigerator is at least 35% more energy-efficient than a grade three one). o Install energy efficient lightning (which uses less energy to give the same amount of illumination and last longer than conventional incandescent bulbs). o Disconnect or switch- off units/appliances which are not in use. o Monitor different energy uses (e.g. electricity, fuels and/or gas).	

Accidental fires	• No fires will be permitted on site for any reason. If required, a designated smoking area will be provided, and clearly demarcated and signposted, with a facility for safe containment and disposal of cigarette butts. • The following measures must be implemented: o Adequate firefighting equipment must be available on site and in good working order (including at least one type ABC (all purpose) 2.5 kg fire extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment. o Provide a list of all authorities involved in firefighting in the region. This list must include emergency contact numbers and must be visible at the site office.	Site Manager, ECO
Traffic impact	• It must be ensured that a backlog of traffic does not develop at the access points during peak hours, through the implementation of an efficient and effective access control system.	Site Manager, ECO
DECOMISSIONG PHASE		
Rehabilitation	• Stockpiles must be removed during the decommissioning phase, the area ripped and the top soil returned to its original depth to provide a growth medium • Rehabilitation of cleared surfaces, plant area and landscaping should be as far as possible make use of indigenous vegetation. • Repair all erosion damage as soon as possible and in any case not later than six months before the termination of the Maintenance Period to allow for sufficient rehabilitation growth. • Cordon off areas that are under rehabilitation as no go areas using danger tape and steel droppers. If necessary, these areas should be fenced off to prevent vehicular, pedestrian and livestock access. • The use of environmentally friendly fertilizers and pesticides is recommended during maintenance of area • Roads that can and will be used by other users post closure should, however, be left provided this is agreed upon by all parties concerned.	Site Manager, Contractor

8. Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon

8.1 Monitoring of Impact Management Actions

SA Block will implement an ongoing monitoring programme for its proposed operations as recommended, ensuring environmental requirements stipulated in this EMPr are complied with. Various monitoring mechanisms have been suggested and included in specialist studies and revolves around Soil erosion, dust management, alien invasive vegetation, socio-economic issues (job creation), Noise and determine the progress of rehabilitation.

8.2 Monitoring and reporting frequency

The monitoring of impacts and reporting frequency will be different for the various environmental aspects. Table 5 details the environmental aspects to be monitored, the component of the aspect and the frequency of data collection and reporting.

Frequency of monitoring will differ from Weekly to Annually. It should be noted that other required monitoring will be added for purposes of the water use license application and the air emission license.

8.3 Responsible persons

SA Block is a subsidiary of Afrimat which has its own Environmental Specialists and Officers as well as SHEQ Officers under the Sustainability Department. These officials serve as independent Environmental Control Officers to its subsidiaries. These officials will serve as an external auditor/s responsible for ensuring that all necessary environmental monitoring required for the Midvaal Brick Manufacturing project is undertaken as per the monitoring programmes. The site manager and other staff that will be allocated for certain monitoring activities will also assist in required monitoring on site.

8.4 Time period for implementing impact management actions

Impact Management will be undertaken in each respective phase in which it would be applicable. In terms of monitoring, each management action will be implemented immediately after the monitoring reporting has been undertaken.

8.5 Mechanism for monitoring compliance

Monitoring programmes to be developed.

Table 5: Mechanisms for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Clearance of land for establishment of infrastructure	Ecological degradation and biodiversity loss	Biodiversity monitoring to preserve the faunal and floral species of conservation concern Plant search and rescue management plan must be implemented for reinstating vegetation and ensuring rehabilitation objective is reached	ECO	• Rehabilitation monitoring and reporting to be conducted annually during the summer months for two years post-closure • ECO Annual Compliance Monitoring Reports
	Establishment of alien invasive species	Regular follow-up clearing of aliens No spraying of herbicides as it also kills many adjacent non-target species	Site Manager and appointed specialist service provider	• Bi-monthly inspection of site for the visible signs of alien species establishment during and construction and rehabilitation(closure) phases
Operations of the brick plant	Generation of noise	Noise readings undertaken with a hand held monitoring device will be required	• Environmental Control Officer/Environmental Officer/ SHEQ Officer	• Baseline monitoring • Monthly reporting on compliance with the Noise quality standards

		Vehicles/plant/equipments must be inspected on a regular basis Records to be kept of monitoring activities.	• Acoustical Consultant	• Review of vehicle/plan/equipment maintenance plan as or when required • Frequent inspections of vehicles/plant/equipment
Fuel and oil storage	Hydrocarbon contamination of soil and groundwater	Regular inspections of areas prone to hydrocarbon spills and contamination must be inspected on a regular basis. Contamination the affected environment will require remediation actions. **Soil contamination** After completion of remediation actions it is recommended that samples be taken to ensure the soil quality comply with the rehabilitation objectives. Records to be kept of	All staff, Environmental Control Officer/Environmental Officer/ SHEQ Officer	• Annual review of the Emergency preparedness and response plan or review after occurrence of emergency incident • Review of vehicle/plan/equipment maintenance plan as or when required • The boreholes should be sampled quarterly throughout the life of the mine and post- closure. • Daily inspections of vehicles/plant/equipment • Weekly inspections of hazardous substances storage facilities • Weekly inspections of spill prevention equipment

		monitoring activities.		
Employment of workers and procurement of services	Job Creation and Skills Training	• A grievance procedure to be developed and address at least the following: ○ Procedure for recoding and addressing all complaints received by site employees, contractors, or sub-contractors and surrounding I&APs.	• Company Directors • Human Resource manager • SHEQ/ Health and Safety Manger	• Ongoing recording of complaints received by I&AP • Review of Social Labour plan as required by legislation and the competent authority
Rehabilitation	Dust, noise and alien invasive plants	• Rehabilitation of all mined out areas should be taken after the brick plant and associated infrastructure in that area has been completed • Regular follow up on alien invasive species	• Environmental officer – external audits • Rehabilitation / financial auditors	• Rehabilitation monitoring and reporting to be conducted annual during the summer months for two years post-closure • ECO Annual Compliance Reports

9. EMERGENCY RESPONSE PLAN

The current Afrimat emergency response plan contained in **Appendix E** will remain relevant during construction and operation of this development and should any activity, not covered by this plan, be conducted by the contractor it will be the contractor's responsibility as part of his method statement to include an emergency response for that particular activity.

9. CONCLUSION

Provided this project is mitigated, as per the EMPr, the project will result in limited negative environmental impacts that can be mitigated through implementation of this EMPr. Should these recommended measures be adopted in the planning, construction and operation/ maintenance phases of the proposed activity, the EAP finds that the predicted impacts of the proposed activities are within acceptable limits. It is the applicant's responsibility to ensure that this EMPr is made binding on the contractor by including the EMPr in the contract documentation.

This EMPr should be used as an on-site reference document during all phases of this development, and environmental auditing should take place in order to determine compliance with this EMPr. Parties responsible for transgression of this EMPr should be held responsible for any rehabilitation that may need to be undertaken. Parties responsible for environmental degradation through irresponsible behaviour / negligence should receive penalties.

It should be noted however, that environmental management is dynamic and as such the EMPr must be flexible in order to accommodate changing circumstances and requirements. Ongoing environmental monitoring of the brick manufacturing project should be carried out throughout its life cycle, and such should be conducted by a dedicated Environmental Control Officer, to identify and address new issues as they arise, and to update or amend the management plan accordingly.