

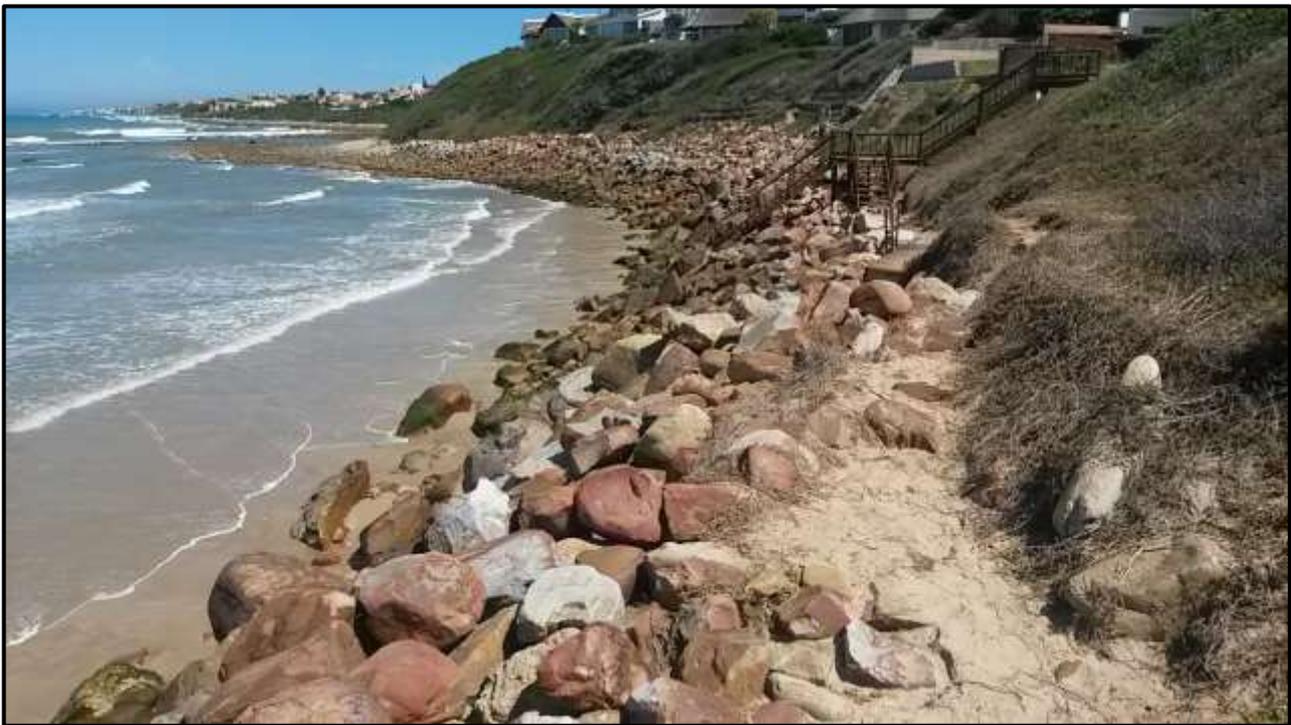


ECO ROUTE ENVIRONMENTAL CONSULTANCY

DRAFT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME

The Construction of a Boardwalk to Connect Granny's Pool to Main Beach, St Francis Bay, Eastern Cape

DEDEA EIA REF: EC08/C/LN1&3/M/31-2019



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This EMPr will need to be amended to contain specific conditions if Environmental Authorisation is granted.

1. INTRODUCTION

In accordance with the Integrated Environmental Management Guidelines published by the Department of Environmental Affairs & Tourism (DEAT) in 1992, the purpose of an Environmental Management Programme (EMPr) is “to describe how negative environmental impacts will be managed, rehabilitated or monitored and how positive impacts will be maximised”.

National Environmental Management Act, (Act 107 of 1998)

(i) Section 28 of NEMA (National Environmental Management Act, Act 107 of 1998) states that:

Duty of care and remediation of environmental damage

“(1) Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimise and rectify such pollution or degradation of the environment”

This EMPr must be read in conjunction with the Basic Assessment Report and the Maintenance Management Plan, both dated August 2019. All recommendations, relevant conditions and mitigation measures provided in these documents must also be adhered to.

This EMPr must form an integral part of the contract documents, as it outlines the methodology & duties required so that the project objectives can be achieved in an environmentally sustainable manner; with particular reference to the prevention and mitigation of environmental impacts caused by operational activities associated with this project.

These requirements will have a financial impact on the project’s costings.

This EMPr is a dynamic document that may need to evolve during its implementation period so that it recognises any new issues that may arise; or changes in the parameters of identified issues and can address these issues with the required/amended mitigation.

The Polluter-Pays Principle

This principle provides for “the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.” The Polluter Pays Principle will be rigorously applied throughout the operational phase of this project.

Appendix 4 of Regulation 982 of the 2014 EIA Regulations contains the required contents of an Environmental Management Programme (EMPr). The checklist below serves as a summary of these requirements:

<p>(a) Details of</p> <p>(i) the EAP who prepared the EMPr; and</p> <p>(ii) The expertise of that EAP to prepare an EMPr, including a curriculum vitae.</p>	<p>This EMPr was prepared by Samantha Robertson of Eco Route Environmental Consultancy. Samantha has a BSS Geography and Environmental Management degree and has 5 years’ experience as an Environmental Assessment Practitioner, of which she has spent 3 years at Eco Route. Samantha is currently based at Eco Route’s Durban office. Please see attached CV of the EAP.</p>
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<p>(b) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.</p>	<p>This EMPr covers all aspects involved in the Proposed Construction of a Boardwalk to Connect Granny's Pool to Main Beach, St Francis Bay, Eastern Cape</p> <p>Section 2 provides specific project details.</p>
<p>(c) A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers</p>	<p>Section 2 provides GIS mapping which superimpose the proposed activity onto environmentally sensitive areas.</p>
<p>(d) A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all the phases of the development including –</p> <p>(i) Planning and design;</p> <p>(ii) Pre-construction activities;</p> <p>(iii) Construction activities;</p> <p>(iv) Rehabilitation of the environment after construction and where applicable post closure; and</p> <p>(v) Where relevant, operation activities</p>	<p>Addressed in Sections 3 and 9.</p>
<p>(e) A description and identification of impact management outcomes required for the aspects contemplated above.</p>	<p>Addressed throughout the EMPr, specifically in Sections 3 and 9.</p>
<p>(f) A description of the proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated above will be achieved and must, where applicable include actions to –</p> <p>(i) Avoid, modify, remedy control or stop any action, activity or process which causes pollution or environmental degradation;</p> <p>(ii) Comply with any prescribed environmental management standards or practises;</p> <p>(iii) Comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable.</p>	<p>Addressed throughout the EMPr, specifically in Sections 4 and 9.</p>
<p>(g) The method of monitoring the implantation of the</p>	<p>Section 6.</p>

impact management actions contemplated above.	
(h) The frequency of monitoring the implementation of the impact management actions contemplated above.	Section 6.
(i) An indication of the persons who will be responsible for the implementation of the impact management actions.	Sections 6, 8, 9 and 13.
(j) The time periods within which the impact management actions must be implemented.	Section 9.
(k) The mechanism for monitoring compliance with the impact management actions.	Sections 5 and 6.
(l) A program for reporting on compliance, taking into account the requirements as prescribed in the Regulations.	Section 6.
(m) An environmental awareness plan describing the manner in which – (i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment	Sections 8 and 9.
(n) Any specific information that may be required by the competent authority.	All required information has been addressed within this EMPr and annexures.

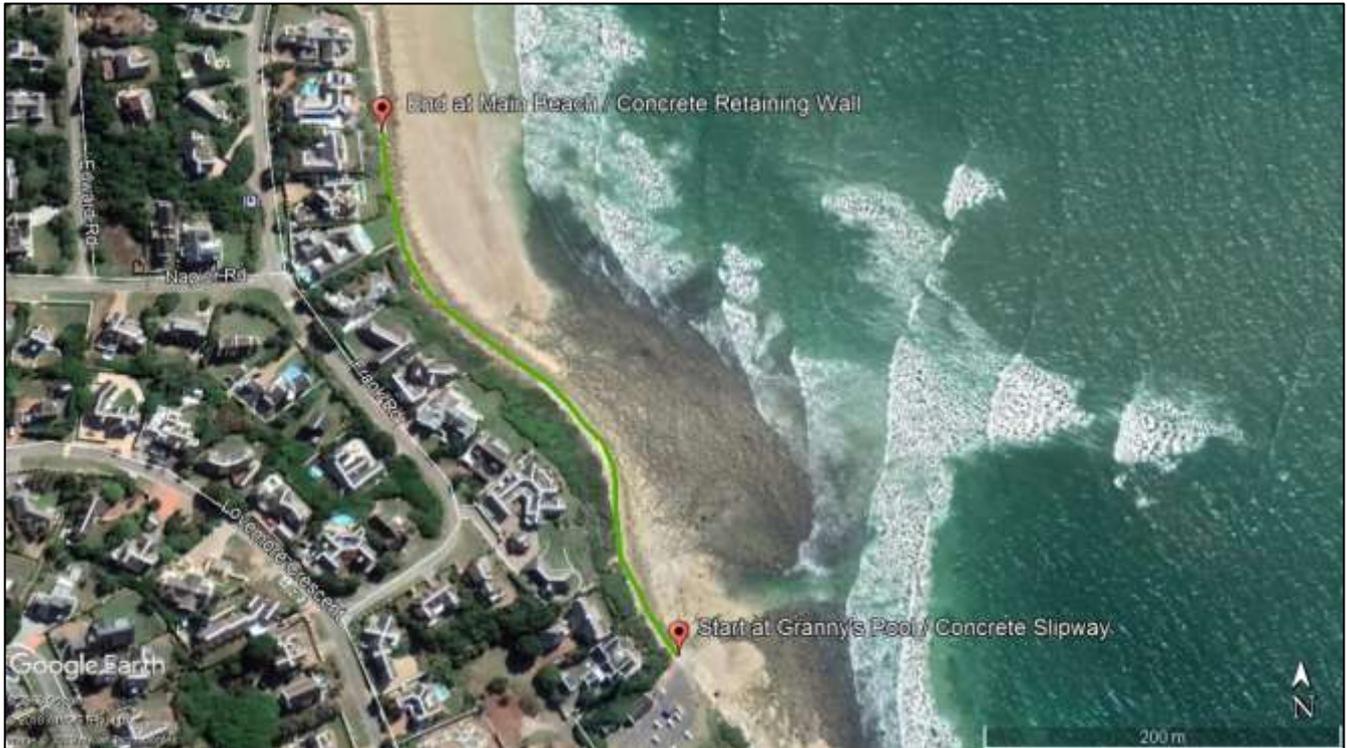
2. PROJECT DETAILS

Eco Route Environmental Consultancy has been appointed as independent environmental practitioners by the proponent, Kromme Enviro-Trust, to ensure the lawful construction of a boardwalk starting from Granny's Pool and ending at Main Beach, St Francis Bay, Eastern Cape. A Basic Assessment has been compiled in terms of the National Environmental Management Act (Act 107 of 1998).

The proposed boardwalk falls within 100m from the high-water mark of the sea which indicates that the development occurs within the coastal protection zone. The proposed development would also occur in the littoral active zone as defined in the Integrated Coastal Management Act, 2008 (Act 24 of 2008) as: "any land forming part of, or adjacent to, the seashore that is- (b) characterised by dunes, beaches, sand bars...etc."

The proposed will be the construction of a timber-based boardwalk which is approximately 333 metres in length and 1.2 metres wide, with a guardrail of 0.9 metres in height. Included in the design will be two fishing / viewing platforms (GPS coordinates: 34°10'6"S 24°49'56"E; 34°10'3.06"S 24°49'54.59"E).

The boardwalk will begin at the level of the existing concrete slipway at Granny's Pool (GPS coordinates: 34° 10' 11.89"S, 24° 50' 0.61"E) and end at the existing concrete retaining wall at Main Beach (GPS coordinates: 34°10' 2.96"S, 24°49' 54.58"E) .



Map 1 Locality / route map of the boardwalk

The construction method proposed is as follows:

- No sand will be excavated; hence no plant/equipment will require access to the area. All work will be done by hand.
- Overgrown vegetation will need to be periodically trimmed back. No vegetation will need to be removed.
- A set of columns supporting horizontal beams will be positioned on level concrete screeds placed directly on / in-between rocks along the edge of the Spring High Tide level.
- Once in position and vertically aligned, a concrete encasement weighing approximately 150kg is cast around the column base.
- These support columns are to be installed at regular intervals of 2200mm and 1170mm; alternatively, in elevated areas.
- For minimum height areas the spans will be increased to 2800mm and 1770mm respectively (The seaside leg will be longer than the landside due to the slope towards the sea).
- Column diameters will increase for longer poles. Cross bracing will be used where column heights exceed 2m to prevent swaying.

- Where practical water-jet probing will be done i.e. where boulders are small and can be rolled aside. In addition, the area must be reasonably flat with a high water table. Large boulders will be left in situ and pole footings positioned in-between. The idea is to **not** use heavy equipment (e.g. TLB) in this area and all work will be done manually. This will take longer but will be less invasive.
- In the dune area specifically between the public access way and the retaining wall, lateral tie-backs into the dune for each 4.2m section is to be provided. Cross bracing will also be required in this section.
- The walkway will be made up in lengths of 3.6m, 4.2m and 6.5m. These sections will be bolted together at the ends (bulkheads).
- The boardwalk will be widened from 1.2m to 2.4m where the viewing / fishing platforms have been provided as part of the preferred alternative. In alternative 2, the boardwalk will remain at a constant width of 1.2m with the same route, length, and handrail and decking plank design / dimensions as the preferred alternative.
- The footprint of the viewing / fishing platforms will be approximately 97.61m² each.
- Wooden staircases for Erf 1282, RE/ 3640, and Erf 243 will be incorporated into the proposed boardwalk.



Map 2 showing erven where wooden staircases will be positioned.

Coastal Engineering recommendation on construction methodology:

Coastal Environmental Engineer, Laurie Barwell was requested to assess the potential impact the design of the boardwalk would have on the coastal environment and vice versa. This review report is appended to this BAR as appendix D.

The following points highlight the findings of the review report:

- The timber-based boardwalk is a temporary structure in terms of the design – it is known to the applicant that the sea may damage the structure during large storms which would require repair work. In addition, the exposure to the sun, wind, sand and sea will result in the need for routine maintenance on the structure.
- Laurie states that the coastline of St Francis Bay is in an eroding state and; therefore, this would have long-term effects on permanent structures along the coastline. However, due to the temporary design of the boardwalk the erosion of the coastline would not pose a significant impact on the boardwalk.
- The boardwalk would have seastorm surges overwashing and/ or submerging lower parts of the boardwalk (elevation lower than +3.7 m MSL) even without sea level rise. Therefore, the risk of storm damage to the boardwalk must be acknowledged and accepted.
- Although the design calls for a heavy concrete foundation plinth to be constructed to secure the vertical walkway support poles, the risk of the foundation being undercut by the removal of the beach sand and subsequent destabilization of the mainly loose beach boulders during a large storm is real. The construction methodology should take this into account. The suggestion is to use a water-jet probe to determine the actual level of the bedrock and then to place the poles deep enough to counter failure due to cross-shore erosion, the ideal being to go down onto bedrock.
- Should the boardwalk structure fail, it would have a very minimal impact of the surrounding environment. Wooden poles can be easily removed to prevent public hazard concerns.

Elevation profile of the boardwalk:

- the boardwalk will start at level +3.03m MSL,
- after approximately 164m from the start of the boardwalk the level will increase to +3.5m MSL,
- 199 m from the starting point the boardwalk will rise to a viewing point at an elevation of +5.03m MSL,
- 218.5m from the start the boardwalk will rise again in elevation to +7.39m MSL,
- Thereafter, the boardwalk elevation decreases to +6.88m MSL at 272m,
- Over a distance of 61m the boardwalk passes existing beach access steps at an elevation of +5.88m MSL and a fishing/ viewing platform at +5.73m MSL,
- The boardwalk ends at a level of +5.88m MSL.



Map 3 showing the elevation profile of the boardwalk

Protection against storm surges:

The walkway is a minimum of 1m above the Spring High Tide level. Decking planks have 25mm to 30mm spacing between planks. This should minimize the uplift force of storm surges that exceed 1m. Each set of supports is weighted down by 2 x 150kg - 300kg blocks of concrete.

Safety & Future maintenance:

Signage regarding conditions of use of the boardwalk will be erected at both entrances of the boardwalk.

All components are connected using s/s screws, coach screws and bolts -no nails will be used. This will add to the longevity of the structure. Where replacement components are required, connectors can be unscrewed, and the faulty component replaced.

Alternatives

“Alternatives” are defined in the Regulations as different means of meeting the general purpose and requirements of the activity, which may include alternatives to: (a) the property on which or location where it is proposed to undertake the activity; (b) the type of activity to be undertaken; (c) the design or layout of the activity; (d) the technology to be used in the activity or process alternatives; (e) the operational aspects of the activity; and (f) the option of not implementing the activity.

At present the following **design** alternative is being considered for this project:

- Fishing / viewing platforms will **not** be included in the second alternative design of the boardwalk.

DESIGN SPECIFICATIONS:

Preferred alternative

Length of boardwalk:	333 metres
Width of boardwalk:	1.2 m extended to 2.4 m where the viewing / fishing platforms are included
Material type:	Timber – based with concrete casings / foundations
Railing:	Timber handrail – height: 0.9 m
Decking plank spacing:	25 – 30 mm
Viewing / fishing platform	Yes – two platforms are proposed at coordinates: 34°10'6"S 24°49'56"E; 34°10'3.06"S 24°49'54.59"E

Alternative 2:

Length of boardwalk:	333 metres
Width of boardwalk:	1.2 m
Material type:	Timber – based with concrete casings / foundations
Railing type:	Timber handrail – height: 0.9 m
Decking spacing:	25 – 30 mm
Viewing / fishing platform	No

The design of the boardwalk is of a temporary nature due to the prevalence of sea storms and the damage experienced along this stretch of coastline. Therefore, timber was chosen as the best material to be used for such a structure as it has little impact on the receiving environment should the structure fail; as opposed to permanent structures of concrete and steel.



Map 4 conservation map of the area

3. IMPACTS AND MITIGATION MEASURES

PHASE	NATURE OF IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE EFFECT	SIGNIFICANCE	PROPOSED MITIGATION
construction	Pollution /contamination of the surrounding environment due to incorrect storage of construction materials	Limited to the site and immediate surrounds	Short term	Low - Medium	Highly probable	Completely reversible	No loss of resources – Marginal loss of resources *dependent on scale of pollution	Low – Medium	Low negative– where it would have negligible effects and would require little or no mitigation Medium negative – the impact will have moderate negative effects and will require moderate mitigation	<ul style="list-style-type: none"> All construction material should be stored on an impermeable surface if not in use – a construction storage / set up area can be established on both the Granny's Pool car park and the Main Beach car park. The timber must be treated off-site. All cement must be mixed on an impermeable surface. Any spillage of

PHASE	NATURE OF IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE EFFECT	SIGNIFICANCE	PROPOSED MITIGATION
										cement must be cleared immediately and replaced with clean sand.
construction	Closure of the proposed activity area due to construction work	Limited to the site	Short term	Low	Definite	Completely reversible	No loss of resources	Low	Low negative– where it would have negligible effects and would require little or no mitigation	<ul style="list-style-type: none"> The area must have shade cloth providing a boundary between the construction area and the remaining beach. Danger tape must be used where relevant. Warning signage must be erected.
construction	Disturbance and destabilisation to rock and sand formations should dredging be undertaken – this includes water jet	Limited to the site	Short term	Low - Medium	Probable - Highly probable	Completely reversible – Partly reversible	No loss of resources	Medium	Low negative– where it would have negligible effects and would require little or no mitigation	<ul style="list-style-type: none"> Dredging or water-jet probing must only be undertaken if necessary. The area must be

PHASE	NATURE OF IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE EFFECT	SIGNIFICANCE	PROPOSED MITIGATION
	probing								Medium negative – the impact will have moderate negative effects and will require moderate mitigation	stabilized to ensure damage does not occur to the surrounding environment.
construction	Disturbance to wildlife	Limited to the site	Short term	Low	Probable	Completely reversible	No loss of resources	Low	Low negative– where it would have negligible effects and would require little or no mitigation	<ul style="list-style-type: none"> Any wildlife encountered during construction must either be left as is or moved to a safer spot along the beach. No wildlife may be killed or injured.
construction	Limited construction hours due to changing tide	Limited to the site	Short term	Low	Definite	Irreversible	No loss of resources	Negligible	Low negative– where it would have negligible effects and would require little or no	<ul style="list-style-type: none"> Precaution must be taken when dealing with the changing tide levels.

PHASE	NATURE OF IMPACT	EXTENT	DURATION	INTENSITY	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE EFFECT	SIGNIFICANCE	PROPOSED MITIGATION
									mitigation	
construction	Noise pollution	Limited to the site	Short term	Low	Highly Probable - Definite	Irreversible	No loss of resources	Low	Low negative– where it would have negligible effects and would require little or no mitigation	<ul style="list-style-type: none"> Staff must be asked to keep noise levels down. No other mitigation exists.
construction	Temporary employment opportunities	Local	Short term	Low	Definite	n/a	n/a	Low	Low positive – the impact will have minor positive effects / Medium positive – the impact will have moderate positive effects	<ul style="list-style-type: none"> n/a

4. LEGISLATIVE REQUIREMENTS

4.1 Signing of the EMPr

The acknowledgement form at the back of the approved EMPr is to be signed by the holder of the Environmental Authorisation (the Proponent), the Site Manager and the ECO; acknowledging that all parties are familiar with the requirements of the EMPr. All employees, especially the machine and equipment operators, are to be made aware of the conditions as contained in the EMPr as well as the contractual conditions relating to the environment as contained in the contract document.

4.2 Legislation

Of importance are all national, provincial and municipal by-laws and regulations. Statutes are amended periodically and it is the Proponent's responsibility to identify legislation relevant to the proposed activity.

LEGISLATION	ADMINISTERING AUTHORITY	TYPE Permit/ license/ authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval)
CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA. (ACT 108 OF 1996)	Department of Environmental Affairs, Republic of South Africa. All State and Provincial Departments as well as Local Authorities that have been identified as relevant Competent Authorities.	RELEVANT CONSIDERATION
ENVIRONMENTAL CONSERVATION ACT (ACT 73 OF 1989)	Department of Environmental Affairs, Republic of South Africa.	RELEVANT CONSIDERATION
NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)	Department of Economic Development, Environmental Affairs and Tourism	AUTHORIZATION
NATIONAL ENVIRONMENTAL MANAGEMENT AMENDMENT ACT (ACT 62 OF 2008)	Department of Economic Development, Environmental Affairs and Tourism	AUTHORIZATION
NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO 10 OF 2004)	Department of Economic Development, Environmental Affairs and Tourism	COMMENT/ RELEVANT CONSIDERATION

NATIONAL ENVIRONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT (ACT NO 24 OF 2008)	Department of Environment, Forestry and Fisheries: Oceans & Coasts / Department of Economic Development, Environmental Affairs and Tourism	COMMENT/ RELEVANT CONSIDERATION/ AUTHORIZATION
NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT (ACT 57 OF 2003)	Department of Economic Development, Environmental Affairs and Tourism	RELEVANT CONSIDERATION
SEA SHORE ACT (ACT 21 OF 1935)	Department of Environment, Forestry and Fisheries: Oceans & Coasts / Department of Economic Development, Environmental Affairs and Tourism	COMMENT/ RELEVANT CONSIDERATION/ AUTHORIZATION
CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)	Department of Agriculture and Rural Development	RELEVANT CONSIDERATION
NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)	Eastern Cape Provincial Heritage Resources Authority	RELEVANT CONSIDERATION
OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)	Department of Health	RELEVANT CONSIDERATION

4.3 Project Responsibilities

Responsibility for the implementation of the EMPr lies with the Proponent who must retain the services of a suitably experienced Environmental Control Officer (ECO) who will monitor the construction and operational processes and activities periodically.

The ECO's responsibilities must include, *inter alia*:

- ❖ Secure the protection and rehabilitation of the environment.
- ❖ Guide, advise and consult the relevant authority on environmental issues during construction and operation.
- ❖ Guide, advise and consult any sub-contractors, suppliers etc. who will be involved in this project.
- ❖ Revise the EMPr as required and inform the relevant parties of the changes.
- ❖ Ensure that the EMPr has been accepted and understood as a contractually binding document on all parties involved with this project.

- ❖ Ensure that staff operating equipment are adequately trained, certified and sensitised to any potential hazards associated with their tasks.
- ❖ Educate staff as to the need to refrain from indiscriminate waste disposal and/or pollution of local soil and water resources, ensure that they (the staff) have received the necessary safety training, and are aware of the importance of a “clean-site policy.”
- ❖ The management guidelines contained in this document must form part of the contractual agreements between the Proponent, Site Manager and the ECO. A tabulated synopsis of relevant responsibilities is appended hereto.

5. REPORTING PROCEDURES

5.1 Documentation

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

An Environmental File which includes:

- ❖ Copy of the Environmental Authorisation;
- ❖ Copy of the approved EMPr
- ❖ Copy of all other licences/permits;
- ❖ Environmental Method Statements;
- ❖ Non-conformance Reports;
- ❖ Environmental register, which shall include:
 - Communications Register – including records of complaints, minutes and attendance registers of all environmental meetings;
 - Monitoring Results – including environmental monitoring reports, register of audits, non-conformance reports; and
 - Incident book – including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record.
- ❖ Waste Documentation such as, but not necessarily limited to: Waste Manifest Documents, Safe Disposal Certificates (SDCs) and Sewerage Disposal Receipts;
- ❖ Material Safety Data Sheets (MSDSs) for all hazardous substances; and
- ❖ Written Corrective Action Instructions.

5.2 Environmental Register

The Proponent will put in place an Environmental Register and will ensure that the following information is recorded for all complaints / incidents:

- ❖ Nature of complaint / incident.
- ❖ Causes of complaint / incident.

- ❖ Party/parties responsible for causing complaint / incident.
- ❖ Immediate actions undertaken to stop / reduce / contain the causes of the complaint / incident.
- ❖ Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint / incident.
- ❖ Timeframes and the parties responsible for the implementation of the corrective or remedial actions.
- ❖ Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented.
- ❖ Copies of all correspondence received regarding complaints/incidents.

5.3 Non-Conformance Report

A Non-Conformance Report (NCR) will be issued to the Proponent as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be issued by the ECO to the Proponent in writing. Preceding the issuing of a NCR, the Proponent must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of a NCR. The following information should be recorded in the NCR:

- ❖ Details of non-conformance;
- ❖ Any plant or equipment involved;
- ❖ Any chemicals or hazardous substances involved;
- ❖ Work procedures not followed;
- ❖ Any other physical aspects;
- ❖ Nature of the risk;
- ❖ Actions agreed to by all parties following consultation to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account;
- ❖ Agreed timeframe by which the actions documented in the NCR must be carried out; and
- ❖ The ECO should verify that the agreed actions have taken place by the agreed completion date. When completed satisfactorily, the ECO and Proponent should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

5.4 Environmental Emergency Response

The Proponents environmental emergency procedures must ensure appropriate responses to unexpected / accidental actions / incidents that could cause environmental impacts.

The Environmental Emergency Response Plan is separate to the Health and Safety Plan as it is aimed at responding specifically to environmental incidents and must ensure and include the following:

- ❖ Employees shall be adequately trained in terms of incidents and emergency situations;
- ❖ Details of the organisation (i.e. manpower) and responsibilities, accountability and liability of personnel;
- ❖ A list of key personnel and contact numbers;
- ❖ Details of emergency services (e.g. the fire department / on-site fire detail, etc.) shall be listed;

- ❖ Internal and external communication plans, including prescribed reporting procedures;
- ❖ Actions to be taken in the event of different types of emergencies; and
- ❖ Incident recording, progress reporting and remediation measures to be implemented.

Please Note: Cement is the only hazardous substance that may be used on the site, however no mixing of cement may be done on the site. Due to the sensitivity of the site, no other hazardous substances may be used.

6. COMPLIANCE WITH THE EMPr

6.1 Monitoring and Compliance

The monitoring and compliance of the development should take place as follows:

- ❖ The ECO has the authority to instruct the Proponent to cease a particular operation causing or liable to cause significant environmental damage, and issue fines or penalties for non-compliance of the Environmental Management Programme/ EMPr.
- ❖ An Environmental Control Officer (ECO) must during **construction** activities, monitor the site every week and audit the site every **fortnight**. Once the project is completely in the **operational** phase, monitoring and audits should be conducted **once a month for the first 6 months and twice a year thereafter** to monitor the success of the project.
- ❖ The holder of the environmental authorisation (the Proponent) is responsible to ensure that an environmental audit report is submitted to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) as per the timeframes stipulated in the Environmental Authorisation (EA) for the lifetime of the said activity.

6.3 Auditing Process

The terms of reference for the audits must comprise the following:

- ❖ Develop a checklist against which the criteria can be referenced during the audit.
- ❖ During the audit process, key individuals involved with the management of the project are to be given the opportunity to comment on issues being audited and will be invited to accompany the auditor during the site inspection.
- ❖ Compile an audit report on the implementation of the EMPr and compliance to the Environmental Authorisation and submit this report to the competent authority (DEDEAT).

Compliance ratings against which the listed criteria are assessed are as follows:

Symbol	Rating	Interpretation
Y	Yes	Evidence of compliance
P	Partial	Evidence of partial compliance
N	No	Evidence of non-compliance
NR	Not Relevant	The condition or commitment is not relevant at this stage of the development or it is inappropriate
NA	Not Audited	Not audited

6.4 Non-Compliance

Definition

The non-compliance is defined as, and will be issued for:

- ❖ Any deviation by the Proponent from the environmental conditions and requirements as set out in the EA and EMPr - or;
- ❖ Any contravention by the Proponent of environmental legislation - or;
- ❖ Any unforeseen environmental impact resulting from direct or indirect actions or activities on site that would be considered as a significant impact. Significance will be determined by the Environmental Control Officer (ECO) but will be informed by geographic extent, duration, lasting effects of the impact and extent of remediation to the impact.

Types of non-compliances issued

Two types of non-compliances may be issued:

A. Stop Works Non-Compliance

Stop Works Non-Compliance will require that all works as described in the non-compliance will stop immediately and may only continue on a formal written permission from the ECO.

Stop Works Non-Compliance will be issued under the following conditions:

- ❖ Total disregard by the Proponent to the environmental conditions and requirements listed in the EA and EMPr;
- ❖ An activity that if left unattended will escalate the degree, severity or extent of the environmental impact.

B. General Non-Compliance

A general non-compliance will allow work and activity by the receiving party to continue while the corrective action takes place.

6.5 Issuing a Non-Compliance

Non-compliance may be issued to:

- ❖ The Proponent
- ❖ Any representative of the Proponent

6.6 Process of Issuing Non-Compliance

The appointed Environmental Control Officer (ECO) may issue a formal non-compliance to the Proponent. A copy of the non-compliance issued will be placed in the EMPr file. The Proponent will be responsible for returning a formally signed off corrective action (as per template) to the ECO to be placed in the EMPr file. The ECO will be required to sign-off on the corrective action, indicating that it has been completed within the timeframes and to the satisfaction of the ECO.

6.7 Failure to complete corrective actions

In the event that the Proponent fails or refuses to complete the corrective action, either at all or within the allocated timeframe, the ECO shall,

- ❖ Inform DEDEAT in writing that a condition of approval for the project is not being met.

The DEDEAT office is responsible for resolving the impasse with the Proponent.

The Proponent is deemed not to have complied with the EA and EMPr if:

- ❖ Within the boundaries of the site and site extensions there is evidence of contravention of clauses;
- ❖ Environmental damage occurs due to negligence; inappropriate actions taken by the Proponent or any of his staff.

On receiving a notice of non-compliance the Proponent is required to swiftly address the issue/s taking all corrective actions required to rectify the situation. Penalties will be applied for non-compliant situations. Penalties/fines are advocated to ensure corrective measures are successfully undertaken and the necessary standard of rehabilitation is achieved. The penalties imposed per incident or violation will be as follows:

Table 1: Penalties for Non-Compliance

Penalties associated with a non-compliance is not a set amount but will depend on the nature and extent of the impact. The cost of any soil and /or groundwater monitoring and any soil and /or groundwater remediation required by authorities will be to the Proponent's account.

The imposition of such a penalties / fines shall not preclude the relevant competent authority from applying an additional penalty in accordance with statutory powers.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression as deemed fit.

6.8 Unlawful Activity/ies

Section 28 (15) of NEMA entitles authorities to administer a fine not exceeding R 1 million or to imprisonment for a period not exceeding 1 year or both such a fine and imprisonment.

Section 31N of NEMA entitles environmental authorities to administer a fine not exceeding R 5 million or 10 years imprisonment and/or a fine and imprisonment for a person guilty of an unlawful activity. The Act makes allowance for the rectification of unlawful activity and may charge up to R1 million administration fees over and above the remediation costs.

NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of other environmental statutes. Importantly, NEMA provides for the liability of conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

7. AMENDMENTS TO THE EMPr

This EMPr outlines the environmental practices and mitigation measures to be adhered to during the construction phase in order to curtail and/or minimise potential negative impacts and promote sound environmental practises.

Any significant issues not covered in the EMPr as submitted, will be addressed as an addendum to this EMPr, and submitted for approval. The EMPr is a living document and is subject to change from time to time in consultation with the DEDEAT. Any amendments to the EMPr will require approval from the DEDEAT.

8. ENFORCING THE EMPr

The holder of the Environmental Authorisation (EA) has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes casual labour, etc.). The EA and approved EMPr shall be part of the terms of reference for all stakeholders.

All senior and supervisory staff members shall familiarise themselves with the full contents of the EA and approved EMPr. They shall know and understand the specifications of the EA and approved EMPr and shall be able to assist other staff members in matters relating to the EA and approved EMPr.

TABLE OF RESPONSIBLE PARTIES BELOW:

Responsibility	Name of Responsible Party
Proponent	Kromme Enviro-Trust
Environmental Control Officer/ ECO	To be appointed
Site Manager	To be appointed

9. ENVIRONMENTAL MANAGEMENT PROGRAMME

9.1 PRE-CONSTRUCTION PHASE

- **AUTHORISATIONS, PERMITS, AND METHOD STATEMENTS**

All necessary authorisations, permits, and licences must be obtained by the Developer prior to the commencement of construction.

The following Method Statements must be provided by the Contractor:

- Details on the design and construction of maintenance areas.
 - Details on the location, layout and maintenance of the construction storage area.
 - Details on the location, layout and preparation of cement / concrete mixing activities / areas.
 - Fire Management Plan
- **APPOINTMENT OF CONSTRUCTION TEAM**
- The Developer must ensure that this EMPr forms part of any contractual agreements with a Contractor(s) and sub-contractors for the execution of the proposed project. The Contractor must make adequate provision in their budgets for the implementation of the EMPr.
 - The Principal Contractor (including sub-contractors and suppliers) must comply with the relevant provisions of the EMPr, applicable environmental legislations, by-laws and associated regulations promulgated in terms of these laws.
 - An Independent ECO must be appointed at the Developers cost to monitor the implementation of the EMPr.
 - The nomination of the ECO must be given to DEDEAT, in writing, prior to the start of construction. The notification must include contact details for the ECO and details pertaining to the ECO's relevant experience.
 - Should the ECO for the development change at any time, this must be communicated, in writing, to DEDEAT, within fourteen (14) days of appointing the new ECO. The notification must include contact details for the ECO, details pertaining to the ECO's relevant experience and reasons for the change in ECO.
- **NOTICE OF CONSTRUCTION**
- A written notice must be given to DEDEAT fourteen (14) days prior to the commencement of construction. Commencement for this purpose includes site preparation. The notice must include a date on which it is anticipated that the activity will commence and the reference number for the EA.
- **ENVIRONMENTAL AWARENESS TRAINING**
- Construction staff must be adequately educated by the ECO as to the provisions included in the EMPr and in terms of general environmentally-friendly practice.

9.2 CONSTRUCTION PHASE

- **ENVIRONMENTAL PROTECTION**

- All “No Go Areas” must be demarcated and no activity of any kind will be allowed in the demarcated areas.
- Killing, poaching and harassment of all animals is strictly prohibited. All possible care should be taken to minimize the impact on wildlife in the area.
- Vegetation shall not be unnecessarily disturbed and damaged.
- No Indigenous trees may be cut or removed without a permit from the Department of Agriculture, Forestry and Fisheries.
- A contingency plan must be established to cope with the event of a fire, soil erosion, or accidental pollution.
- No fires may be lit by the contractor or employees.
- The use of water from the sea is not permitted.
- All cement must be mixed on an impermeable surface. Any spills must be collected immediately and replaced with clean sand.
- No hazardous spills will be permitted.
- No pollution of the surrounding environment will be permitted.
- Timber may not be treated on-site.

- **SITE DEMARCATION**

- The boundary of the site must be agreed with the ECO and demarcated; all activities must be conducted within this area.
- Construction and other activities, such as eating, washing and ablution will be restricted to special demarcated areas i.e. at the car park site.
- The contractor must ensure that all his machinery and materials remain within the demarcated site boundaries.
- No heavy machinery is permitted on the site.

- **RESTRICTED AREAS**

- The contractor must limit all movement (vehicle and pedestrian) to the demarcated access routes.
- All other areas outside of the construction area are classified as “restricted”.
- No members of the public or any unauthorised persons should gain access to the site without seeking permission from the Kromme Enviro-Trust.
- No vehicular access to the beach, other than for emergency vehicles, is permitted.

- **CONTRACTOR’S OFFICE AND BUILDING MATERIAL DEPOT**

- The contractor’s site must be situated in an accessible and non-sensitive area i.e. the car park area. It must be demarcated, security fenced and fully rehabilitated after the completion of the general contract.

- The office and depot areas must be located within easy access from the proposed boardwalk site and in a non-sensitive part of the property.
- The contractor shall ensure that all delivery drivers are informed of all procedures and restrictions applicable to them and that the deliveries of materials are supervised during the offloading by the site manager who has read and understands the EMPr.
- All building materials brought on site must be stored in the contractor's camp and if necessary out of the rain and wind to prevent sedimentation and spillage onto the site.

- **FACILITIES**

TOILETS

- Sufficient toilet facilities (1 toilet per 15 workers) must be made available by the contractor and sited in approved locations according to the ECO.
- Toilets may not be placed within 32m of the beach.
- The toilets must be placed out of the public eye and be of a transportable nature.
- Chemical toilets are preferable, and the toilets must be regularly (once a week) and efficiently serviced and kept in a hygienic state.
- Adequate toilet paper must be provided.
- Discharge of toilet waste into or onto the environment is strictly prohibited.

REFUSE

- The contractor must prevent the spread of refuse within and beyond the site.
- Refuse includes all solid waste such as cement, rubble, timber, other building material off cuts and waste. As well as food packaging, cans, plastic etc.
- All waste must be collected, contained and removed.
- An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be employed.
- Waste bins / containers must be used, and these must be provided with lids.
- The contractor must ensure that his employees deposit all waste in the waste bins.
- Bins must be emptied on a weekly basis.
- All waste must be disposed of off-site at the Municipal facilities.

POLLUTION CONTROL

- No diesel or petrol to be stored on site.
- In case of changing oil or lubricants on site, the contractor shall have drip trays available to collect any oil, fluid, etc.
- The contractor shall remove all oil-petrol and diesel-soaked sand immediately and discard of it as hazardous waste.
- Any hazardous waste substances must be disposed of off-site at a licensed landfill site equipped to deal with hazardous waste.
- Cement and concrete are regarded as highly hazardous to the natural environment, due to the very high pH of the material, and the chemicals contained therein. The contractor shall therefore ensure that:

1. Dry cement is stored above ground level and any spillage is immediately cleared.
2. Concrete is mixed on mortar boards or any other impermeable surface.
3. The visible remains of concrete are physically removed immediately and disposed of as waste.
4. Washing of cement containers or waste water containers into the ground or throwing into the sea is prohibited.

EMERGENCY PROCEDURES

- The contractor shall establish emergency procedures for events such as fire, leakage of chemicals or other harmful substances, high tides and storm surges.
- The contractor shall be responsible for training of all employees with regards to these procedures.

- **EROSION AND STORM WATER MANAGEMENT**

- Erosion prevention and control measures must be implemented. Sand bags and silt fences must be used to contain all sediment and prevent erosion during construction.
- The contractor must ensure that the existing storm water drainage system is not impaired in any way.
- Reasonable measures to control the damaging effects of storm water run-off must be taken.
- The contractor must ensure that erosion and or pollution of water does not occur as a result of site activities.
- The contractor shall ensure that polluted runoff is not discharged overland.
- Natural runoff shall be diverted away from the work site and storage areas.

- **EARTHWORKS**

- No earthworks are permitted for this activity.

- **ARCHAEOLOGY AND ARTEFACTS**

- Should any heritage resources, as defined in the Nation Heritage Resources Act (25 of 1999), be discovered during the course of construction activities all work is to cease and the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) are to be notified immediately. Construction activity may only re-commence once they have given the approval to do so. The ECO must be informed immediately should any such objects be seen or be suspected.

10. STAFF CONDUCT CONTROL AND INFORMATION SHEET

ALL STAFF MUST OBEY THE FOLLOWING RULES:	
1	DO NOT tamper with or destroy nesting sites, lairs or any other form of animal shelter.
2	DO NOT feed the native animals.
3	DO NOT leave the project site untidy and strewn with rubbish that will attract pests.
4	DO NOT bring any pets onto the project site.
5	DO NOT trespass onto private properties not linked to the project.
6	DO NOT carry a weapon onto the project site or in the vehicles transporting workers to and from the site.
7	DO NOT set fires.
8	DO NOT cause any unnecessary disturbing noise at the project site or at any designated worker collection/drop off points.
9	DO NOT drive a vehicle under the influence of alcohol.
10	DO NOT exceed the national speed limits on public roads or exceed the recommended speed limits in this management plan (where applicable)
11	DO NOT drive a vehicle that is generating excessive noise (noisy vehicles must be reported and repaired as soon as possible).
12	DO NOT litter along the roadsides, including both public and private roads.
13	DO NOT remove or destroy vegetation around the site without the prior consent of the site manager and Environmental Control Officer.
14	DO NOT tamper with, destroy or remove vegetation from any areas that have been fenced off or marked.
15	DO NOT pollute watercourses, whether flowing or not.
16	DO NOT drive through watercourses.
17	DO NOT operate critical items of mechanical equipment without having been trained and certified.
18	ALL employees must undergo the necessary safety training and wear the necessary protective clothing at all times.
19	NO unsocial behaviour will be permitted e.g., excessive shouting, hooting etc.
20	NO ad-hoc activities are to be undertaken e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden
21	NO trespassing on private / commercial properties adjoining the site is forbidden.
22	NO worker may be forced to do work that is potentially dangerous or for what he / she is not trained to do.

11. RESPONSIBILITIES

The "Responsibility" column is merely a guide and does not relieve the Proponent of his responsibilities in terms of overall compliance with the EA and EMPr.

FUNCTION	RESPONSIBILITY
Proponent	<ul style="list-style-type: none"> The Proponent is ultimately responsible for the ensuring compliance with all the requirements associated with the construction, operation, rehabilitation and decommissioning phases of the project.
Site Manager	<ul style="list-style-type: none"> The Site Manager is responsible to ensure that all necessary communication and submission of required documentation concerning this project is submitted to the relevant authorities. The site manager is required to adhere to the EMPr and is responsible to ensure that all staff appointed also adhere the EMPr. Ensures that all staff are made aware of the need to conduct activities in an environmentally responsible manner. (Site Manager) On instruction by the ECO, ensures that storm/surface water controls are established. Ensures prompt remediation of any sewage spills. Stockpiles are protected from aeolian effects, stormwater effects, or being driven over by workers. Ensures that a "clean-site" policy is applicable at all times. Ensures that all complaints by residents are dealt with promptly. Is responsible for any contravention/s by staff or any non-compliance with the EMPr.
Environmental Control Officer (ECO)	<ul style="list-style-type: none"> The ECO is to have access to the site at all times, for the purpose of inspections to ensure that the environmental conditions of the EMPr as well as the conditions stipulated to in the EA and the recommendations made in the EIR are being implemented and adhered to. The ECO must report on the environmental aspects of the project to the responsible person/authority at agreed intervals. The need for any deviations or variations in the environmental conditions must be reported to the DEDEAT for approval prior to these being undertaken. The ECO must be fully cognisant with the contents of the Environmental Authorisation as well as this EMPr and any other applicable legislation
Competent Authority	<ul style="list-style-type: none"> The Compliance Officer appointed by the Competent Authority is responsible for the ensuring that the Proponent, Site Manager and ECO are compliant with the provisions of the EA and EMPr.

ACKNOWLEDGEMENT FORM

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in all other contract documents.

PROJECT NAME:

THE CONSTRUCTION OF A BOARDWALK TO CONNECT GRANNY'S POOL TO MAIN BEACH, ST FRANCIS BAY, EASTERN CAPE

PROPONENT:

Signed: Date:

SITE MANAGER:

Signed: Date:

ENVIRONMENTAL CONTROL OFFICER

Signed: Date:

APPENDIX A: CV OF EAP

APPENDIX B: SITE DEVELOPMENT PLAN

APPENDIX C: VEGETATION MAP

APPENDIX D: CONSERVATION

APPENDIX E: PROTECTED AREAS