PROPOSED CONSTRUCTION OF A NEW SAPS POLICE STATION AND PACKAGE PLANT - LUSIKISIKI

BASIC ASSESSMENT REPORT (FINAL)

Completed in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010.

NEAS Ref No: DEA/EIA/0000/0000402/2011
DEA Ref No: 12/12/20/2314.
Waste Ref. No: 12/9/11/L799/1

June 2012

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EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

The National Department of Public Works (DPW) (the Applicant) proposes to establish a new police station and on-site package plant treatment works in the Lusikisiki/Flagstaff area. The project site is situated between Lusikisiki and Flagstaff on the R61 approximately 650 metres west of the Lusikisiki Central Business District. The project falls within the O.R. Tambo District Municipality and under the local Ingquza Municipality (O.R. Tambo Municipality).

Terreco Environmental cc were appointed by Ron Beard and Associates to undertake an Application for Environmental Authorisation as required under Section 24 of the National Environmental Management Act, Act No 107 of 1998. Consultation with the Department of Environmental Affairs (DEA) verified that the Application for Environmental Authorisation was to be supported by a Basic Assessment Report and Environmental Management Programme. Please see **Appendix G** for acknowledgement of receipt and acceptance of new application: **DEA Ref No: 12/12/20/2314.** This report presents the findings of the Basic Environmental Assessment which has been completed in accordance with Regulations 21 and 22 of the EIA Regulations (Government Notice No. R. 543, 18th June 2010). A **Waste License Application** was been submitted to the Department of Environmental Affairs in Pretoria in accordance with the National Environmental Management: Waste Act 59 of 2008. **Reference number: 12/9/11/L799/1.**

An integrated application form was sent to DEA in June 2012. A reference number is pending.

A **Water Use License Application** has been submitted to the Department of Water Affairs in Mthatha in accordance with the National Water Act No 36 of 1998. A reference number is pending.

The South African Heritage Resource Agency (SAHRA) confirmed the need for a **Heritage Impact Assessment** to be undertaken in line with the National Heritage Resources Act, no 25 of 1999. Please refer to **Appendix G** for conformation letter from SAHRA.

The **Public Participation Process** (PPP) was initiated in August 2011 with the publishing of notices in the newspaper (The Daily Despatch, 2nd August 2011), erection of notice board in English and Xhosa (25 August 2011) on the R61 between Lusikisiki and Flagstaff as well as direct notification of key Interested and Affected Parties (IAPs).

A specialist **Wetland Study** was undertaken by ECO-Pulse Consulting attached in **Appendix D**.

The Draft Basic Assessment Report was submitted to DEA and all relevant stakeholders in February 2012. Please refer to **Appendix G** for confirmation of receipt of Draft BAR by DEA dated 3 May 2012.

The purpose of the Basic Environmental Assessment is to identify and assess potential environmental impacts which may arise as a result of the construction and operation phases of the proposed new police

station and package plant treatment works. This is achieved through public and stakeholder consultations, literature reviews and field investigations.

ENVIRONMENTAL IMPACT STATEMENT

A detailed assessment of the potential impacts which may arise during the construction and operation phases of the police station and onsite package plant treatment works was undertaken. The implementation of the EMPr will reduce the significance of potential negative impacts.

The primary environmental concern regarding the project is the operation of the package plant treatment works. The conditions pertaining to the operation of the on-site treatment works have been presented below as well as in the Specialist Wetland Study undertaken by Eco-Pulse. The primary alternative presented to the competent authorities regarding options that would negate the need to release treated effluent into the wetland is the installation of evaporation ponds which would receive the treated effluent from the on-site FAMSYSTEMS package plant.

The package plant treatment works is seen as a temporary means of dealing with sewage from the police station. As soon as Phase 1 of the municipal treatment works is complete. The package plant will be decommissioned and all sewage from the police station will be diverted to the newly built municipal treatment facility situated in Lusikisiki.

Operation of FAMSYSTEMS package plant:

1. The quality of the treated effluent released from the package plant has to meet the special limits listed in Table 3.1 of the Wastewater Limit Values applicable to discharge of waste water into water resources published in the latest version of General Authorisations in terms of Section 39 of the National Water Act 36 of 1998.

2. If the competent authorities deem it unfavourable to release treated effluent into the wetland system, as an alternative, evaporation ponds should be installed to receive treated effluent from the package plant. This would negate the need to release treated effluent into the wetland system.

3. If the SAPS do not have the technical expertise or provide a dedicated budget for the maintenance and operation of the FAMSYSTEMS treatment works, a contract with an independent service provider must be undertaken to service the package plant at least once a month until such time as the police station is connected to the municipal treatment works. The contract must include a maintenance programme as well as monthly monitoring of the treated effluent to be presented to DWA (Mthatha). The contract must be presented to the relevant authority before operation of the treatment works. The contract will contain the following deliverables:

    - The qualified service provider will visit the plant monthly during the normal operation of the plant and check the operation and efficiency of the plant.

- The qualified service provider will communicate with the operator and management of the plant and inform the client of any changes that need to be made to improve the operation of the plant or to ensure continued operation taking into account new conditions that occur, such as increased occupancy.

- The qualified service provider will do whatever tests are required on site to establish the efficiency of the plant and although these tests will be reported, they shall not constitute tests for acceptance by the authorities.

- In addition of the company tests, the following tests will be done by an approved laboratory for submission to the authorities:

    - Test to be completed
        - Faecal coliforms
        - PH
        - Electrical Conductivity
        - COD
        - Ammonia as Nitrogen
        - Suspended solids

- Samples will represent the normal operation of the plant and shall not be adapted, diluted or changed in any manner to try to alter the test results. Samples will be tested by a registered laboratory and in accordance with the standards required by Department of Water Affairs.

- The qualified service provider will issue a written report monthly confirming findings and proposals, including all information that may be required by the authorities for the evaluation of the operation of the plant.

- If required, as part of this agreement the qualified service provider will retrain operating staff, to ensure that a qualified operator is available at all times. Certificates must be issued.

- Where required the qualified service provider will supply specialised consultancy services to the plant operator. Where these services fall within the normal operation of the plant in accordance with the design specifications, these services will be supplied at no cost.

4. The treatment works will be placed within a lined, impermeable concrete bund with the capacity to hold 110% of the maximum volume of the treatment works to ensure in the event of any leakage, no raw sewage will enter the soils/groundwater.

5. An artificial reed bed is to be installed downstream of the package plant as secondary treatment to the treated effluent before release.

6. Once phase 1 of the Ingquza municipal WWTW is complete, the SAPS will connect to the municipal sewage system and decommission its own package plant treatment works.

7. The Applicant must develop an emergency action plan covering all foreseeable emergencies which might occur – however remote – including spillages of sewage or sludge from the treatment works.

8. The relevant DWA authorisation must be obtained before operation of the treatment works. The DWA authority should include a time limitation for the SAPS to connect to the municipal WWTW once phase 1 of the municipal treatment works is complete.

9. The construction of the new police station and package plant treatment works should not be allowed to proceed without approval and implementation of the Construction Environmental Management Programme (EMPr) attached as **Appendix F.**

10. The EMPr must be legally binding on all contractors and subcontractors operating on site. Contractors and subcontractors must accept responsibility for abiding by the environmental specifications and penalty clauses (e.g. fines) must be included in the contract documentation and applied in event of non-conformance.

11. An external independent Environmental Control Officer (ECO) must be appointed to undertake site inspections for the duration of the construction phase (from site preparation through to handover). The frequency of the site inspections are described in the EMPr.

12. All construction staff must undergo environmental awareness training and must be made aware of the consequences should the specifications of the EMPr and the conditions of the DEA authorisation be contravened.

13. Construction work should be limited to the immediate area only. Everything outside of the construction area must be regarded as no-go, particularly where private property and sensitive natural areas are involved.

14. Should borrow pits be required for the Project the prescribed process described in the Minerals and Petroleum Resources Development Act 28 of 2002 must be followed and a permit obtained from Department of Minerals and Energy (DME).

15. A complaints register must be developed and maintained. The register must record the complainant, the complaint and the measures taken to address the issue of concern.

16. All precautions specified in the MSDS must be applied when using the chemicals.

17. All chemicals and other possible pollutants and/or contaminants must be stored in a designated enclosed area under lock and key. Chemical stores must be located more than 100m from any water body and at least 50m from the property boundary.

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SECTION A: INTRODUCTION AND METHODOLOGY

1. Introduction and Overview

The National Department of Public Works (the Applicant) proposes to establish a new police station in the Lusikisiki/Flagstaff area. The project site is situated between Lusikisiki and Flagstaff on the R61 approximately 650 metres west of the Lusikisiki Central Business District. The project falls within the O.R. Tambo District Municipality and under the local Ingquza Municipality. The site boundary covers an area of approximately 7.1m x 141m and is offset by 13 metres off the provincial road R61. The project site is bordered by Eskom to the south, a gravel road and municipal open space to the east, a municipal vehicle testing station to the west and the R61 runs along its northern boundary. A wetland is situated to the north of the project site across the R61.

The local Ingquza Municipality is in the process of developing its own waste water treatment works. The municipal treatment works proposed in Lusikisiki will alleviate many of the challenges associated with new developments in the area. At this point it is not known when the treatment works will be complete. It is for this reason the conditions presented within this report are focused on ensuring the maintenance and competent operation of the on-site package plant until such time as the municipal treatment works is operational. Once phase 1 of the Ingquza Municipality`s WWTW is complete, the police station will decommission its own on-site package and connect to the municipal WWTW main sewage line which is proposed to run in a north/south orientation on the western edge of Lusikisiki approximately 600 – 700 meters east of the proposed police station and package plant.

Terreco Environmental cc were appointed by Ron Beard and Associates to undertake an Application for Environmental Authorisation as required under Section 24 of the National Environmental Management Act, Act No 107 of 1998. Consultation with the National Department of Environmental Affairs confirmed that a Basic Assessment Report would be necessary in support of the Application for Environmental Authorisation. This report presents the findings of the Basic Environmental Assessment which has been completed in accordance with Regulations 21 and 22 of the EIA Regulations (Government Notice No. R. 543, 18 June 2010).

This report will also be submitted in support of a Waste License Application. This application is being made in terms of the National Environmental Management: Waste Act 59 of 2008 and the nature of the listed activities require a BAR to be prepared in support of the Waste Licence Application.

The purpose of the Basic Environmental Assessment is to identify and assess potential environmental impacts which may arise as a result of the construction and operation phases of the proposed police station. This was achieved through public and Interested and Affected Party (IAP) consultations, literature reviews and field investigations. The approach to the Basic Assessment study is described in Chapter 4.

The purpose of this document is to present all relevant information to DEA and DWA so as the respective departments may make informed decisions regarding the project.

2. Structure of the Report

The Basic Assessment Report has been structured to reflect the requirements of the EIA Regulations, specifically Regulation 22 (1) and (2) of Government Notice No. R. 543 (18 June 2010). As per Regulation 22 (1), the Basic Assessment Report follows the format provided by the relevant authority, in this instance the National Department of Environmental Affairs (DEA). The DEA prescribed Basic Assessment Report, has been included at the end of this report. Appendices A – G are provided as follows:

APPENDIX A: Site Plan and Figures
APPENDIX B: Photographs
APPENDIX C: Facility Illustration
APPENDIX D: Specialist Reports
APPENDIX E: Comments and Responses Report
APPENDIX F: Information in support of applications for exemption
APPENDIX G: Other Information:

- DEA acceptance of application
- DEA Waste Licence reference number
- Request for HIA by SAHRA
- Advert
- DEA acknowledgement of receipt of Draft BAR
- FAMSYSTEMS package plant technical information
- SAPS structural design report
- Civil report
- Geotechnical report
- Traffic impact assessment
- Declaration of independence for specialist
- DWAF waste water limits
- Lusikisiki crime statistics (2003/4 – 2010/11)

3. Details of the Environmental Assessment Practitioner (EAP)

Regulation 22 (2) (a) of the EIA Regulations, 2010, indicates that the Basic Assessment Report must contain details of the EAP who prepared the report and the expertise of the EAP to carry out basic assessment procedures. The general requirements for EAP's are outlined in Regulation 17 of the EIA

Regulations, specifying that the EAP must be independent[1], must have the necessary expertise in conducting environmental assessments and must perform the work in an objective manner.

The Basic Assessment was undertaken by Bevan O`Reilly of Terreco Environmental, under the supervision of Ms Louise Jupp. Terreco Environmental is an East London-based environmental consulting firm with extensive experience in a variety of development projects through the Eastern Cape Province. Bevan O`Reilly, BSc (Hons) has been and is currently involved in a number of development projects in and around East London. Mr O`Reilly has prepared a number of Environmental Management Programmes for roads as well as housing developments. Some of these include the Basic Assessment and Environmental Management Programme for the proposed development of Portions 1 and 3 on Farm 695, East London as well as Basic Assessment and Environmental Services for the Coffee Shack, Coffee Bay and Red Crest Farms cc, Stutterheim. Mr O`Reilly is familiar with the water use application process as well as the waste licence application process.

Louise Jupp has a BSc (Honours) in Earth Science and an MSc in Environmental Science. She is a Director of Terreco Environmental cc and has been operating as an Environmental Practitioner in the UK and South Africa for over 18 years. She has undertaken environmental impact assessments for a variety of infrastructure projects in urban and rural settings including new road schemes, transmission lines, runway extensions, rail lines and bulk sewer mains in accordance with South African and major funding requirements and frameworks. Other related environmental experience includes preparing chapters on the principles of and methodology for undertaking EIA for road schemes and air transport for the European Union and the Cypriot Government. She is therefore familiar with the environmental impact assessment process and its application on a variety of related infrastructure projects.

Terreco Environmental cc, nor any of its members have any business, financial or personal interest in respect of the proposed development of the new police station, other than fair remuneration for work performed in undertaking the Basic Assessment.

The Terreco Company Profile and CV's for any of the parties involved in the Basic Assessment process are available on request.

4. Need for/ purpose of Basic Environmental Assessment Process

The need for the BAR is linked to the project comprising 'listed activities as described in GNR544 and GNR 718. The nature of these listed activities requires a Basic Assessment Report. It so happens that both the Environmental Authorisation and Waste Licence applications both require the same level of EIA.

[1] The EAP must have no business, financial, personal or other interest in the in respect of the application or activity other than fair remuneration for work performed in connection with the activity. Furthermore, there must be no circumstances which may compromise the objectivity of the EAP.

This document has therefore been produce to cover both applications. All listed activities in terms of GNR 544 and GNR 718 have been applied for under these applications are outlined in full in the table below:

Table 1: Relevant Listed Activities under GN544 & GNR 718

RELEVANT NOTICE:	ACTIVITY NO :	DESCRIPTION :	RELEVANCE:
Gov. Notice No. R. 544 (18 June 2010)	(11)	The construction of: x) buildings exceeding 50 square metres in size; or xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.	The police station is off-set by 13 metres from the R61. The wetland north of the R61 is not delineated. The project proposal includes the laying of a pipeline within 32 metres of the wetland. If this option is taken It is expected 5m^3 plus of material will be excavated within close proximity of the wetland.
Gov. Notice No. R. 544 (18 June 2010)	(18)	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse	Construction and operation of a pipeline to release treated effluent into a wetland area.
Gov. Notice No.718	(11)	The treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.	Maximum capacity of treatment works is 8184 cubic metres a year.
Gov. Notice No.718	(18)	The construction of facilities for activities listed in Category A of this schedule.	The construction of the FAMSYSTEMS Package Plant.

The Basic Environmental Assessment is undertaken in accordance with Regulations 21 – 25 of the Environmental Impact Assessment Regulations, 2010[2], promulgated in terms of Section 24(5) of NEMA (as amended).

Other than the EIA Regulations, cognisance was taken of the DEAT Guideline documents published in support of the 2010 EIA Regulations[3]. The Basic Assessment Report, chapter 8 of this document, follows

[2] Government Notice No. R. 543.

the format supplied by DEA, ie the **Basic Assessment Report in terms of National Environmental Management Act, (Act No 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010**.

For the NEMWA requirements GN No. 718 (3 July 2009) Schedule: Waste management activities in respect of which a waste management licence is required in accordance with section 20(b) of the national Environmental Management Waste Act, 2008 (Act No. 59 of 2008).

The methodology employed in the Basic Assessment is outlined as follows:

- The appointment of Terreco Environmental in May 2011 as an independent Environmental Assessment Practitioner (EAP) for the completion of the Basic Assessment (BA).
- Initial discussions with the project consultant, Dennis Sibanda of Ron Beard and Associates to determine the overall approach, timeframes and scope of the BA.
- Initial visit to the potential development site.
- Notification to DEA of the intention to undertake a Basic Environmental Assessment for the proposed new police station. And submission of the Application for Authorisation. **DEA Ref No: 12/12/20/2314.**
- Submission of Water Use License Application and Water Quality Management Report to DWA Mthatha (22/8/2011).
- Submission of the Waste Licence application to DEA (20/10/2011). **Ref No.:12/9/11/l799/1.**
- The **Public Participation Process** (PPP) was initiated in August 2011 with the publishing of notices in the newspaper, erection of signage and direct notification of key Interested and Affected Parties (IAPs). The detailed approach to the PPP and the key issues and concerns which were raised by IAPs during the process are provided in the Comments and Response Report, which is included in **APPENDIX E**.

[3] DEAT (2005) *Guideline 3: General Guide to the Environmental Impact Assessment Regulations, 2005, Integrated Environmental Management Guideline Series,* Department of Environmental Affairs and Tourism (DEAT), Pretoria.
DEAT (2005) *Guideline 4: Public Participation in Support of the EIA Regulations, 2005, Integrated Environmental Management Guideline Series,* Department of Environmental Affairs and Tourism, (DEAT), Pretoria.

- Gathering of background information including the detailed project description and design drawings, the Ingquza Integrated Development Plan (IDP) and Strategic Development Framework (SDF) plan, and review of this information.

- A literature review was undertaken to determine the potential impacts associated with the development of the police station with specific attention to the on-site package plant treatment works.

- Heritage Impact Assessment undertaken to comply with request from SAHRA **(Appendix G).**

Once DEA have made a decision on the application, this will be communicated to the Applicant and IAPs. Should any party wish to appeal the outcome of DEA's deliberations, then the appeal process will be activated as per the EIA Regulations.

5. Glossary of Terms and Abbreviations

The following definitions and abbreviations apply in the context of this report:

***Environment*:** The surrounds in which humans exist and that are made up of –

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

Pollution: Any changes in the environment caused by –

(i) substances;
(ii) radioactive or other waves; or
(iii) noise, odour, dust or heat

emitted from an activity, including the storage or treatment of waste or substances, construction and provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on material useful to people, or will have such an effect in the future.

Construction: The building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such a facility, structure or infrastructure that does not result in a change to

the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure.

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs (National)
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism (Provincial)
DR	District Road
DWA	Department of Water Affairs
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPR	Environmental Management Programme
IAPs	Interested and Affected Parties
IDP	Integrated Development Plan
MSDS	Materials Safety Data Sheet
NEMA	National Environmental Management Act, Act No 107 of 1998 (as amended)
NEMWA	National Environmental Management Waste Act: 59 of 2008
PPP	Public Participation Process
SABS	South African Bureau of Standards
SEA	Strategic Environmental Assessment
SDF	Strategic Development Framework
STEP	Subtropical Thicket Ecosystem Planning (Project)
SAHRA	South African Heritage Resource Agency

6. Assumptions and Limitations

It is assumed that the recommendations made in this report will be implemented by the applicant. The primary assumption and environmental concern is that the on-site package plant treatment works will be maintained and operated correctly. Conditions have been made in this document to ensure that the on-

site package plant treatment works is maintained and operated correctly. Failure to comply with the conditions within this report should be viewed as a FATAL FLAW by the relevant authority.

It is expected that the police station will be connected to the municipal WWTW in due course. However, in line with the principals of assessing a worst case scenario – VIZ the new municipal WWTW does not proceed as planned, we have assumed the package plant will be a permanent feature. In an attempt to accommodate DWA future requirements a wetland study was undertaken to assess the condition of the existing wetland and possible impacts the treated effluent may have on the wetland.

It is also assumed that the mitigation measures outlined in the construction EMPr (**APPENDIX F**) will be fully implemented by the appointed contractor and/or applicant and that the contractor and/or applicant will have the expertise and capacity to implement such measures.

7. Description of the Environment

GPS co-ordinates for the site are as follows: 31°21'55.74''S; 29°33'55.66''E. The following chapter summarises the environmental characteristics of the project site and its surrounds. Please refer to **Appendix A** for figures and Site Plan and **Appendix B** for photographs.

a) Locality and Site Description

The project site is situated between Lusikisiki and Flagstaff on the R61 approximately 650 metres west of the Lusikisiki Central Business District. The project falls within the O.R. Tambo District Municipality and under the local Ingquza Municipality. The site boundary covers an area of approximately 7.1m x 141m and is offset by 13 metres off the provincial road R61. Find locality map in **Appendix A** as Figure 1.

The site has a dirt footpath passing through it which is utilised by a number of pedestrians walking to and from Lusikisiki and the KwaNyati areas. Building rubble is present on the project site and in certain areas soil has been dug up and removed. A small (approximately 5m X 5m) concrete foundation is located within the site boundary. Water mains marked by yellow concrete beakers run across the northern end (close to the R61) of the site. A man hole for the water mains is located approximately 15 metres from the R61.

Wetlands are common in the immediately surroundings of Lusikisiki. The wetland to the north of the R61 is a significant feature of the surrounding environment and the portion and is approximately 70 000m^2 in size. The wetland extends for some 800 metres towards Lusikisiki town centre.

b) Existing and Surrounding Land use

The existing land uses surrounding the project site are predominantly Ingquza municipal and state owned services. An Eskom sub-station borders the southern boundary and a municipal vehicle testing facility is situated to the west of the project site. The remaining area is undeveloped land zoned residential.

c) Climate

The Lusikisiki area experiences a relatively mild, wet climate dominated by summer rainfall. Mean annual precipitation is in the region of 700 – 1 100mm. Mean monthly maximum and minimum temperatures are in the region of 37°C and 5°C. Moderate easterly winds prevail during the summer months with more variable winds during winter[4].

d) Vegetation and Fauna

Vegetation according to the SANBI South African Vegetation Map 2006 surrounding the project site is Ngongoni Veld. The dominant species in this vegetation type is *Aristida junciformis* which is known to dominate the grassland and create a mono-dominance associated with low species diversity. The vegetation type is said to be vulnerable with only 1% being statutorily conserved. A total of 39% of Ngongoni Veld has been transformed for cultivation, plantation and urban development. The site itself is a mixture of various grasses with scattered naturalised alien species *Acacia melanoxylon*. The vegetation on site shows signs of being regularly grazed upon and is generally degraded. Please refer to photographs in **Appendix B.**

e) Sensitive Environments

The wetland to the north of the project site extends for about 800 metres eastward towards the town centre of Lusikisiki and is a dominant feature of the surrounding environment. The wetland system provides valuable ecosystem services to the surrounding area, playing a vital role in storm water infiltration, water purification and providing a habitat for a number of fish, bird and invertebrate species. The wetland is presently under pressure from surrounding land uses. Some of those pressures are listed below:

- Nutrification by untreated effluent (sewage).
- Transformation of the wetland fringe into either agricultural land or urban encroachment.
- Illegal dumping of builders' rubble.
- General littering and disregard for the wetland.

Please refer to Figure 2 in **Appendix A** for the identified SANBI Wetlands in the Lusikisiki region. The wetland to the north of the R61 is not displayed on the SANBI site but this does not mean that the wetland is not registered with the DWA. The area surrounding and incorporating Lusikisiki has been identified as a Critical Biodiversity Area 2 by SANBI.

Please see **Appendix D** for Wetland Specialist Report.

[4] Mucina and Rutherford: The vegetation of South Africa, Lesotho and Swaziland (2006).

f) Geology

The **geology** of the broader area comprises Karoo Supergroup sediments intruded by Karoo dolerites. According to SANBI[5] the **soils** surrounding the project site have favourable physical properties including low erodibility, high organic matter and a low base status. The soil class is characterised as soils with humic topsoil horizons. Please refer to Figure 3 in **Appendix A.**

g) Topography and Drainage

The project area is situated within quaternary catchment T60F. The region is known for low rolling hills and its relative abundance of wetland areas. The area surrounding the project site is no exception. A wetland exists to the north of the project site across the R61 and another approximately 500 metres to the south east. The project site itself slopes gently to the north towards the R61 and wetland area.

h) Cultural Heritage

SAHRA has requested that a heritage impact assessment be undertaken before any construction works begin. Please refer to **Appendix G** for request from SAHRA and **Appendix D** for Specialist Report.

i) Noise and Air Quality

The R61 from Lusikisiki to Flagstaff is the main contributor to noise and air quality surrounding the project site. Presently the R61 between Lusikisiki and Flagstaff sees a moderate amount of traffic and the noise environment is dominated by vehicle noise.

8. Project Proposal

a) Project Motivation

The construction of a new police station in Lusikisiki will improve policing infrastructure in the area as well as to increase police presence. The holding cells will allow for more arrests to be made in the area. Improved policing in the Lusikisiki area is one of the goals set out in the IDP of 2010/11. The IDP recognises that improved policing infrastructure in the Lusikisiki area will benefit the surrounding communities.

b) Project Objectives

The primary objective of the proposals is to provide the Lusikisiki/Flagstaff area with a police station and cell block that will, with regards to sewage, be self-sufficient until such time as phase 1 of the Ingquza Municipality`s WWTW is complete. Once phase 1 of the municipal WWTW has been completed, the police station will connect to the municipal system and decommission its on-site package plant.

[5] South African National Biodiversity Institute. www.bgis.sanbi.org

Decommissioning of the package plant will have to be authorised by the relevant authority, in this case DEA (national) as the waste licence has been submitted to DEA.

c) Project

The proposed new police station consists of the following:

- Several single and double storey buildings linked together by means of ramps with a cell block positioned in the centre of the facility;

- Surfaced parking area for 50 vehicles is proposed adjacent to the main entrance of the facility while a staff parking bay is proposed at the bottom end of the facility. The two parking bays will be connected by a surfaced road which will also lead to the cell block. The surfaced area will be finished with concrete interlocking block pavers set between precast kerbing and channels to route storm water runoff into storm water service lines.

- A new intersection off the provincial road incorporating a 300 metre turning lane will be constructed to allow safe access to the site.

- An elevated steel tank situated in the south west corner of the site will provide the facility with a gravity fed water supply.

- The entire site will be fenced using normal palisade fence with brick piers infill and full brick walls.

- An on-site FAMSYSTEMS package plant sewer treatment works will be installed on the south east corner of the site. Please see alternatives (Chapter 9) of this report with regards to treated effluent release options. Please see **Appendix C** for the proposed sewer pipeline route from the police station to the proposed sewer mains running north/south on the western edge of Lusikisiki once Phase 1 of the municipal treatment works is complete.

d) FAMSYSTEMS Plant Design

The plant was designed for a maximum of 100 inmates at 150 litres per day and 100 workers at 70 litres per day. An average biochemical oxygen demand (BOD) of 400 mg/l incoming was used to calculate BOD per person using 65g/day per inmate and 20g/day per worker. To accommodate variations in flows during the day, with increased flows during shower times, the design of the plant allows for a wet peak flow rate of at least 5 times that of the average dry flow.

The main process used in the FAMSYSTEMS plant is a standard activated sludge system, where BOD is broken down using air and bacteria, which grow in this medium. The bacteria grow naturally and no

additional bio-chemicals have to be added in the process. The raw sewage is introduced into a series of fibreglass tanks, where it is contacted with air blown into the tanks by means of an air blower in order for the natural aerobic bacteria to begin breaking down the sewage. The sewage is then introduced into anoxic zone for anoxic bacteria breakdown. The effluent is then treated with chlorine pills with approximately one hour contact time at average flow or 15 minutes at peak flow. The chlorination tank is a 1500 litre PE tank.

The FAMSYSTEMS package plant to be installed at the police station is fitted with a sludge return system which re-introduces sludge into the system thus reducing the amount of sludge generated by the system. Excess sludge that must be removed from the system will be placed in a 2m x 2m x 2m drying bed to dehydrate. As no industrial waste will be introduced into the treatment works and only domestic sewage treated from the police station the dehydrated excess sludge can be used as fertilizer for grazing fields.

It is proposed that an artificial reed bed be installed as a secondary treatment to the treated effluent to be released by the package plant treatment works.

Please see **Appendix C** for locality and contour, sewer layout, storm water layout, water layout and proposed sewer network from Lusikisiki SAPS to the proposed municipal north/south running sewer mains along the western edge of the Lusikisiki town centre.

9. Alternatives

The EIA regulations require that alternatives to a proposed activity be considered. Alternatives are different means of meeting the general purpose and need of a proposed activity. Alternatives may include location or site alternatives, process or technology alternatives, temporal alternatives or the `No-Go` alternatives, with the No-Go alternative as the option of not undertaking the proposed activity or any of its alternatives. The 'No-Go alternative provides a baseline against which the impacts of other alternatives should be compared. Even if the 'No-Go' alternative is not feasible or reasonable, it is compulsory to assess the implications of this course of action.

Consultations with DWA have indicated that more alternatives are to be discussed with a view to avoiding any discharge of treated effluent into the wetland. However, as is presented below there are severe limitations for viable alternatives. The primary limitation is the fact that Lusikisiki does not yet have a municipal waste water treatment works. A specialist wetland study was undertaken to determine what impacts the effluent may have on the wetland. The primary `non-release' alternative presented in this study is the evaporation pond alternative. This option would see the treated effluent be released into evaporation ponds to ensure no effluent reaches the surrounding environment. Given the social implications of not constructing the police station the following alternatives have been presented:

a) Technology Alternatives - Sanitation options

The existing sewer oxidation ponds east and north of the R61 are in unacceptable conditions and pose a health and environmental risk to the surrounding area. Effluent from these ponds often flow into the nearby wetland area. The oxidation ponds which currently exist in the Lusikisiki area were therefore not considered as a viable sewage treatment option for the proposed police station.

A conservancy tank was not considered to be a viable option as there are currently no viable sewage treatment options in the Lusikisiki area that could receive sewage from the police station. Chemical toilets were not seen as an option due to there being no suitable disposal options for the chemical waste.

It is proposed that in addition to the use of the industry leading FAMSYSTEMS package plant, the applicant sign a maintenance and monitoring contract with a private service provider. The contracts lifespan will be until such time as the police station is connected to the proposed municipal treatment works. As part of the contract, monthly water quality reports must be submitted to DWA (Mthatha) to ensure on-going compliance. Please see executive summary and conclusion of this report for deliverables of the contract.

It is proposed an artificial reed bed is to be installed as a secondary treatment for the treated effluent to be discharged by the package plant. Constructed wetlands are engineered systems that have been designed and constructed to utilize the natural process of involving wetland vegetation, soils and the associated microbial assemblages to assist in treating wastewaters[6]. The following options presented below are release options for the treated effluent from the package plant.

*b) Treated effluent release options (Please see **Appendix A**, Figure 5)*

1. An alternative which would negate the need to release the treated effluent into the surrounding environment would be to release the treated effluent into evaporation ponds.

2. One option would be to release the treated effluent into the open land across the existing gravel road to the east of the project site. A 160mm diameter class 34 uPVC sewer pipe will be laid from the package plant underneath the gravel road into a sub-surface soak-away dug on the eastern side of the gravel road. This area is approximately 300 metres from the nearest wetland area.

3. Another option would be to release the treated effluent into the existing wetland north of the R61. A 160mm diameter class 34 uPVC sewer pipe will be laid from the artificial reed bed (receiving treated effluent from the package plant) beneath the R61 into the wetland.

[6] Jan Vymazal (2010). Constructed Wetlands for Wastewater Treatment. *Water*. **530-549.**

4. An alternative which would negate the need to release the treated effluent into the surrounding environment would be to release the treated effluent into evaporation ponds.

It is proposed that an on-site package plant treatment works be utilised until such time as **Phase 1 of the Ingquza Municipal WWTW** in Lusikisiki is complete. Once phase 1 of the municipal WWTW is complete, the package plant treatment works will be decommissioned and sewage from the police station will be connected to the municipal sewer line to be treated at the Municipal WWTW. See **Appendix C** for the proposed sewer network connection from the Police Station to the north-south sewer mains in Lusikisiki.

c) The No-Go Alternative

The No-Go option for the project will involve simply maintaining the status quo, i.e. there will be no development on the proposed site. This would mean that the Lusikisiki area will continue to have inadequate policing infrastructure.

10. Project Needs and Desirability

This section is based on the DEA Draft Guidelines on the information requirements to describe Need and Desirability in the Environmental Impact Assessment Process (Draft Need and Desirability Guidelines, June 2008). Essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for undertaking the proposed works? The Needs and Desirability questionnaire enables a discussion of proposals relative to the IDP and SDF of the region. In light of the above, the need and desirability of proposed new police station is to be addressed separately and in detail answering *inter alia* the following questions:

a) Need (Timing)

Question 1: **Is the proposed development considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the IDP).**

Improvements to policing infrastructure in the Ingquza Hill region is one of many goals set out in the Ingquza Hill Local Municipality Reviewed IDP: 2010/2011. The proposed police station and holding cells will improve the policing capability in the region.

Question 2: **Should development, or if applicable, expansion of the town/area concerned in terms of this land-use (associated with the activity being applied for) occur here at this point in time?**

Land use for the surrounding area has been zoned residential. In light of this zoning and the proposed residential expansion surrounding the project site, the police station would be ideally situated. The entire police station is approximately 5000m^2 in size.

Question 3: **Does the community/area need the activity and the associated land-use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate).**

*The community is in need of improved policing in the region as reflected in the IDP. The need for improved policing in the Lusikisiki region is evident in the crime statistics presented **Appendix G** published by the SAPS.*

Question 4: **Are the necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?**

At this point in time sewage treatment facilities in the Lusikisiki area are not sufficient to support the proposed development. An on-site package plant treatment works has been identified as an option to deal with the waste generated from the police station. The FAMSYSTEMS package plant to be installed at the police station is fitted with a sludge return system which re-introduces sludge into the system thus reducing the amount of sludge generated by the system. Excess sludge that must be removed from the system will be placed in a 2m x 2m x 2m drying bed. Once Phase 1 of the municipal treatment works has been completed, the police station will be connected to the municipal sewer system and the package plant treatment works will be decommissioned.

Question 5: **Is this development provided for in the infrastructure planning, and if not what will be the implication on the infrastructure planning (priority and placement of services)?**

According to the Ingquza Municipality IDP review 2010-2011, the government has set a deadline for the year 2012 for halving the backlog for access to basic sanitation. To date, the Lusikisiki area does not have a municipal WWTW with most inhabitants using pit latrines. Once decommissioned, the FAMSYSTEMS package plant installed at the police station could be removed and installed in a more rural area to act as a satellite WWTW under the supervision of the Ingquza Municipality. According to the Ingquza Municipality IDP review 2010-2011 the ultimate goal of the municipality is to have a flush toilet in

each and every household. A well maintained package plant treatment works would benefit the area until such time as the municipal WWTW has been completed.

b) Desirability (Placing)

Question 1: **Is the development the best practicable environmental option (BPEO) for this land/site?**

Given the number of people that will be using the police station, there are considered to be no other feasible options other than a package plant treatment works, especially given the fact that there is no formal municipal treatment works in Lusikisiki operating within DWA standards. Practically speaking the FAMSYSTEMS package plant, if maintained correctly would be the best option environmentally as there is no formal sewage system in the Lusikisiki area. Sound management of the on-site package plant treatment works must be ensured. Maintenance of the treatment works is of utmost importance as the treated effluent will be released into the nearby wetland to the north of the R61. A maintenance plan and a dedicated maintenance budget for the package plant must be submitted to DEA by the applicant. If the SAPS do not have the necessary skills to maintain the package plant, an external service provider must be appointed to carry out maintenance.

*The positioning of the police station is due to logistical concerns. The R61 provides quick access to the surrounding region for police vehicles. Please see **Appendix G** for crime statistic sin Lusikisiki published by the SAPS.*

Question 2: **Would the approval of this application compromise the integrity of the existing approved IDP and SDF agreed to by the relevant environmental authority?**

*The Ingquza Hill Local Municipality Reviewed IDP: 2010/2011 states the protection of wetlands in the surround area as one of the municipalities' environmental goals. The implementation of strict management and maintenance plans regarding the onsite package plant treatment works is therefor of utmost importance. Treated effluent to be released into the nearby wetland will need to meet the special limits standards listed in Table 3.1 of the Wastewater Limit Values applicable to discharge of waste water into water resources, published in the latest version of General Authorisations in terms of Section 39 of the National Water Act 36 of 1998 **(Appendix G).** The construction of the police station and holding cells will provide improved policing infrastructure to the region. Please see **Appendix G** for crime statistics of Lusikisiki published by the SAPS.*

Question 3: **Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in SEAs).**

Environmental management priorities in the area are to protect wetland areas from further exposure to nutrification and pollution. Historically, nutrification of wetlands, surface water and ground water has occurred through the improper management of waste water treatment works resulting in effluent with high levels of nitrates, nitrites and ammonia entering water-bodies. The implementation of strict management and maintenance plans regarding the onsite package plant treatment works is of utmost importance. The correct operation, maintenance and monitoring of the package plant must be guaranteed by the Applicant before the package plant is utilised. This can be achieved by ensuring the applicant submits a dedicated waste management budget and maintenance plan to the relevant authorities as well as putting in place monitoring and enforcement auditing.

Question 4: **Do location factors favour this land-use (associated with the activity applied for) at this place? (this relates to the contextualisation of the proposed land use on this site within its broader context).**

The following location factors favour development of the police station at this place for the following reasons:

1. *The site is located on the R61, allowing easy access to the surrounding communities by police.*
2. *Land-use for the surrounding area has been zoned residential. The police station will be situated in a residential area.*

The position of the police station and associated package plant does not favour the wetland. However, measures have been put in place to mitigate impacts on the wetland. Please see recommendations listed in this report as well as recommendations presented in the wetland study undertaken by ECO-PULSE. It is also important to note the package plant is a temporary measure until such time as Phase 1 of the municipal WWTW is complete.

Question 5: **How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?**

The potential environmental impacts are covered in detail in Chapter 7 of this report.

Question 6: **How will the development impact on people's health and wellbeing (e.g. i.t.o. noise, odours, visual character and sense of place, etc)?**

The potential environmental impacts are covered in detail in Chapter 5 of this report. Degradation of the already impacted wetland must be avoided at all costs. Moist environments and high humidity have the potential to spread disease. Un-treated sewage or sub-standard effluent entering the wetland has the potential to spread diseases such as cholera, typhoid and dysentery.

Question 7: **Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?**[7]

It is unlikely that the proposed activity would result in unacceptable opportunity costs as the police station will serve the Lusikisiki/Flagstaff community. The current project site has already undergone geotechnical as well as a traffic impact assessment. The current site is also situated on the R61 to allow easy access to the police station. The No-Go alternative would mean that the Lusikisiki area would not receive improved policing infrastructure. The No-Go option would also mean that the wetland would not receive treated effluent from the package plant.

Question 8: **Will the proposed land-use result in unacceptable cumulative impacts?**

Cumulative impacts on the environment are focused on the quality of the treated effluent to be released by the on-site package plant treatment works. Mitigation measures to ensure the proper use and maintenance of the FAMSYSTEMS package plant are listed in chapter 7 of this report as well as in the executive summary.

[7] Opportunity costs can be defined as the net benefit that would have been yielded by the next best alternative

11. Description and Assessment of Potential Impacts

The following chapter summarises the construction and operational activities to take place and presents the findings of the impact identification and assessment exercise as required in terms of the EIA Regulations. It is provided in support of the DEA-prescribed Basic Assessment Form, chapter 8 of this report which should be read in conjunction with this document. It should be noted that only those impacts associated with the construction and operation phases of the development are assessed as the police station is a permanent feature and will not be decommissioned in the foreseeable future. **The FAMSYSTEMS package plant on the other hand will be decommissioned as soon as Phase 1 of the Ingquza Municipality WWTW is complete.**

The primary environmental issue regarding the operational phase of the development is the use and operation of the package plant treatment works. Treated effluent from the package plant treatment works will be released into the wetland area approximately 100 metres to the north of the site. The treatment works will incorporate drying beds for sludge. Please see **Appendix C** for locality and contour, sewer, storm water and water layout. Please see **Appendix G** for the FAMSYSTEMS Package Plant details.

a) Impact Identification

An "aspects" based approach has been used in the identification of potential impacts during the construction and the operation phases. "Environmental Aspects" are the mechanisms by which an activity interacts with the environment. Environmental aspects refer to an element of an activity, product or service which can have a beneficial or adverse impact on the environment. For example, it could involve a discharge, an emission, the consumption or re-use of a material, or noise. A number of environmental aspects have been determined for the proposed operations. These are presented in Table 2:

Table 2: Environmental Aspects

Main Category		Sub-Categories	Example
INPUTS	**Resource Consumption**	Raw Materials Manufactured Products Energy	Electricity, fuel. Sand, gravel and building materials.
		Water	Water for construction works. Potable water for domestic use.
OUTPUTS	**Releases to Water**	Point sources (piped source) Diffuse sources	Effluent from package plant treatment works. Storm water. Unforeseen spillages.
	Releases to Air	Dust Odour	Dust generated from transport and construction. Odour released from package plant treatment works.
	Other Releases	Noise Solid waste Spillages (hazardous) Light	Construction noise. Noise during operation. Solid waste from construction. Light pollution from external lighting
Land Transformation		Surface disturbance Topographical change	Removal of vegetation. Bulk earthworks (cuts and fills). Police building/car park.
Social Aspects		Employment & Training Income generation	Construction staff. Subcontractors. Permanent workforce.

Table 3 expands on identifying potential impacts in relation to construction and operational phases of the project:

Table 3: Aspect and Impact Identification Matrix

ACTIVITY			⇨ INTERACTION BETWEEN THE ENVIRONMENTAL ASPECT AND POTENTIAL IMPACT ILLUSTRATED BELOW ⇩													
PHASE OF OCCURRENCE	CONSTRUCTION (C)	• Establishment & use of construction camp and offices – including provision for any fuel and vehicle/plant storage and workshops. • Procuring and transferring of materials, plant and/or equipment to and from the site. • Storage of construction materials and/or waste on site. • Site preparation, including vegetation clearance and grubbing. • Cement batching. • Earthworks. • Construction/upgrade of existing road surfaces. • Building construction. • Electrical Supply. • Water Supply. • Palisade Fencing. • Site rehabilitation (incorporating the construction areas, camp and informal pathways).														
			C	C	C	C	C	C	C	C	C	C	C	C	C	C
	OPERATION (O)	The use of the Police Station and associated infrastructure and services (excluding sanitation).	O		O		O	O			O	O	O	O	O	O
		The use of the FAMSYSTEMS Package Plant.	O	O	O	O	O	O	O		O	O		O	O	O
ASPECT Element of an activity that can interact with the environment and lead to environmental impacts, or the cause of a given impact.			Energy and Water Consumption	Releases to water (point)	Releases to water, incl stormwater (diffuse)	Releases to air (gaseous. Incl odours & dust)	Noise Emissions & Vibrations	Solid Waste generation, storage & disposal	Accidental spillages	Ground disturbance & vegetation clearance	Change in land form	Change in land use and/or accessibility	Traffic Generation (on, off and to the site)	Employment Opportunities	Procurement of services and goods	Provision of Service
			INTERACTION BETWEEN THE ENVIRONMENTAL ASPECT AND POTENTIAL ENVIRONMENTAL IMPACTS ⇩													
AFFECTED ENVIRONMENT – POTENTIAL IMPACTS	PHYSICAL	Air Pollution.	CO			CO				O				CO			
		Soil compaction / erosion / pollution.			CO					CO	C	C					
		Landscape change and visual impacts.					CO		O		C	CO	CO				
		Surface water pollution.		O	CO				C	CO							
		Groundwater pollution.		O	CO				CO	CO							
		Alteration of drainage systems.	C	O	CO					CO	C	CO					
	BIO-LOGICAL	Terrestrial ecosystem and biodiversity impacts								CO	C		C				
		Aquatic ecosystem and biodiversity impact		O	CO					CO	C						
		Spread of invasive alien species.		O		O					C						
	SOCIO-ECONOMIC	Compatibility / incompatibility with existing and surrounding land uses.		O						CO	C			CO			CO
		Public nuisance – disruption to traffic, access and severance, dust generation, noise and vibration and light 'pollution'.		O		O		CO	CO	CO	C		C	CO			
		Public health and safety, including security.		O				CO	CO	CO			C	CO			CO
	SOCIO-ECONOMIC	Aesthetic impacts.		O			CO		CO	CO	C	C	C				CO
		Socio-economic impacts.								CO			C		C	C	CO
		Compatibility / incompatibility with municipal service provision.															
		Heritage resource impacts.									C						
		Availability of Services	CO												O	O	CO
		Compatibility with SDF and IDP		O													

C	Interaction resulting from a Construction activity	CO	Interactions resulting from construction and operational activities
O	Interactions result from an Operational activity		

NOTE: This table serves to identify interactions between activities and aspects, and aspects and environments which may result in a potential impact only. The interactions indicated would lead to positive and negative impacts and are listed without any consideration of mitigation or significance rating; merely a suggestion on impacts covered.

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b) Impact Prediction

The methodology of the Impact Prediction is presented below.

Nature and significance

Once potential impacts have been identified (refer to Table 3), further investigation is required to predict the nature and significance of an impact. The nature of the impact is essentially the type of impact which may occur from undertaking an activity. The impacts may be positive or negative and may be categorised as being direct (primary), indirect (secondary) or cumulative impacts. The final significance of the impact is a function of probability and consequence. The consequence is determined by considering the severity, spatial extent and duration of the impact. The severity of the impact is determined by qualitative or quantitative criteria as well as by community/public and stakeholder responses. Criteria for the spatial extent, duration of impact, probability of occurrence and mitigation potential are presented below in Table 4.

Table 4: Impact Criteria

CRITERIA	CATEGORIES	EXPLANATION
Overall nature	**Negative**	Negative impact on affected biophysical or human environment.
	Positive	Benefit to the affected biophysical or human environment.
Spatial Extent	**Site**	Immediate area of activity, incorporating the 500m study area.
	Local	Area within 5km of the site/study area.
	Regional	Entire community, drainage basin, landscape etc.
	National	South Africa.
Duration	**Short-term**	Impact would last for the duration of the activity or of the construction works – between 0 to 5 years. Quickly reversible.
	Medium-term	Impact would dissipate within 5 to 10 years of the Project activity. Reversible over time.
	Long-term	Impact would persist for longer than 15 years.
	Permanent	Impact would continue beyond decommissioning.
Probability	**Unlikely**	<40% probability
	Possible	40 – 70% % probability
	Probable	>70% probability

CRITERIA	CATEGORIES	EXPLANATION
	Definite	>90% probability
Mitigation Potential [i.e. the ability to manage or mitigate an impact given the necessary resources and feasibility of application.]	**High**	Relatively easy and cheap to manage. Specialist expertise or equipment is generally not required. The nature of the impact is understood and may be mitigated through the implementation of a management plan or through 'good housekeeping'. Regular monitoring needs to be undertaken to ensure that any negative consequences remain within acceptable limits. The significance of the impact after mitigation is likely to be low or negligible.
	Moderate	Management of this impact requires a higher level of expertise and resources to maintain impacts within acceptable levels. The significance of the impacts after mitigation is likely to be low to moderate. May not be possible to mitigate the impact entirely, with a residual impact(s) resulting.
	Low	Will not be possible to mitigate this impact entirely regardless of the expertise and resources applied. The potential to manage the impact may be beyond the scope of the Project. Management of this impact is not likely to result in a measurable change in the level of significance.
Significance of Impact (preliminary only)	**Slight**	Largely of HIGH mitigation potential.
	Moderate	Largely of MODERATE mitigation potential.
	Substantial	Largely of LOW mitigation potential.

Criteria for ranking impact severity is presented below in Table 5:

Table 5: Criteria for ranking impact severity

RANK		SEVERITY CRITERIA
NEGATIVE	**HIGH -**	• Substantial, Measurable deterioration, Death, illness or injury • Recommended Level always exceeded • Widespread complaints from community • Complete loss of land capability • Soil alteration resulting in a high level impact in one of the other environments • Disturbance to areas that are pristine, have conservation value or are an important resource to Humans • Destruction of rare or endangered species • Deterioration of water quality/quantity, resulting in a high negative impact on one of the other environments • Is difficult to manage • May require an alternative course of action. • May affect the viability of the project.

RANK		SEVERITY CRITERIA
	MEDIUM -	• Moderate, measurable deterioration and discomfort • Recommended level will occasionally be violated • Widespread complaints from community • Partial loss of land capability • Soil alteration resulting in a moderate impact on one of the other environments • Disturbance of areas that have some conservation value or are of some potential use to humans • Complete change in species variety or prevalence • Deterioration of water quality/quantity, resulting in a moderate negative impact on one of the other environments • May be managed. • Is low or medium only if managed according to a management programme. • Does not affect the viability of the project.
	LOW -	• Minor, deterioration, nuisance or minor irritation. Change not measurable • Recommended level will never be violated • Sporadic community complaints • Minor deterioration in land capability • Disturbance of areas that are degraded, have little value or are unimportant to humans as a resource. • Minor changes in species variety or prevalence • Deterioration of water quality/quantity, resulting in a low negative impact on one of the other environments
POSITIVE	LOW +	• Minor Improvement in quality • Change not measurable • Sporadic complaints
	MEDIUM +	• Moderate improvements • Measurable improvements • Will be within or better than recommended level • No observed reaction from public
	HIGH +	• Substantial improvements • Measurable improvements • Will be within or better than recommended level • Favourable publicity

c) Mitigation Potential for Construction and Operation

Mitigation potential describes the ability to manage or mitigate an impact given the necessary resources. Some impacts, by their very nature, are extremely difficult to mitigate, while others may be managed to an acceptable level with the implementation of a sound environmental management programme. Mitigation potential for construction and operational phases are described in Table 6 and 7 respectively.

Table 6: Mitigation potential for Construction Phase:

Potential Impacts	Impact Rating	Proposed Mitigation
Activity Alternative 1 (Preferred Alternative)		
Direct Impacts		
Air pollution. Gaseous emissions will be associated with the use of construction vehicles and plant and/or the storage of fuels and other volatiles on site. Dust generation will result from ground disturbing activities, the stockpiling of soils and materials and from vehicle movements on the construction site.	Spatial Extent: site Duration: short term-medium term Probability: possible Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: slight Significance without Mitigation: moderate	The Contractor shall be responsible for the control of dust arising from the operations and activities on site. Dust generated by construction activities must be minimized, applying spraying, covers on vehicles and other measures as necessary. Some odours are expected from the FAMSYSTEMS Package Plant but generally odours emanating from this type of package plant are minimal.
Soil compaction / erosion / pollution. The risk of soil compaction and erosion is common to construction sites. Excavations and localised changes to the slope and landform will also potentially impact on erosion and pollution risks. Erosion risks will be exacerbated by any failure to control storm water runoff across exposed surfaces and/or compacted surfaces.	Spatial Extent: local Duration: medium-term Probability: possible Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: slight Significance without Mitigation: moderate	Areas susceptible to erosion shall be protected using temporary and permanent drainage works as necessary to control the scouring effect of runoff. Such areas must be monitored regularly for evidence of erosion. Measures to stabilise affected areas must be implemented to the satisfaction of the Engineer.
Landscape change and visual impact. The physical changes to the landscape, starting with the construction activities, will permanently changes the appearance and aesthetic quality of a given area. Specific to the Project, the construction of the police station and package plant will permanently change the landscape of the area. The additional turning lane on the R61	Spatial Extent: site to local Duration: permanent Probability: definite Mitigation: low Overall nature: negative Severity: low Significance with Mitigation: slight Significance without Mitigation: moderate	Mitigation options are limited on account of the police station and cell block design parameters. A rehabilitation plan will be required to redress those areas affected by the construction activities and to repair the informal paths which have been used to date. The dust control measures described above will help reduce the scale of any visual impacts that may otherwise result during construction.

will also be an important man-made feature in the immediate landscape. Excessive dust generation can also have a visual impact.		
Surface/Ground Water Pollution Construction activities may result in water pollution events through the incorrect dumping of spoil, waste or materials near watercourses, the inappropriate siting of toilets, poor storm water management, poor storage, handling or spillage of hazardous materials on site and accidents.	Spatial Extent: site to local Duration: medium term Probability: low Mitigation: high Overall nature: negative Severity: moderate Significance with Mitigation: low Significance without Mitigation: substantial	The Contractor shall implement appropriate infrastructure and facilities to reduce the potential from water pollution during his activities, including silt loading. This will include managing contaminated and uncontaminated storm water runoff, wastewater generation, the storage and use of hazardous materials, the storage, use and maintenance of plant and equipment, leaks and spillages, and waste generation, at a minimum.
Pollution of sensitive environments. The wetland to the north of the project site is a possible receptor to any spills/pollution emanating from the project site during construction.	Spatial Extent: local Duration: medium-term Probability: possible Mitigation: high Overall nature: negative Severity: high Significance with Mitigation: low Significance without Mitigation: substantial	Sensitive environments and natural features within and/or close to the construction site will be designated as 'No-Go' areas.. These measures can be found in the EMPr.
Traffic Increased traffic in the area from construction vehicles.	Spatial Extent: local Duration: short term Probability: definite Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: moderate Significance without Mitigation: substantial	Appropriate traffic warning signs shall be erected and maintained and trained, equipped flagmen used as necessary.

BIOLOGICAL ENVIRONMENT		
Terrestrial ecosystem and biodiversity impacts. It is inevitable the construction phase will result in the loss of vegetation and habitat through ground clearance for the construction of Project structures, at a minimum. The risk of pollution from accidents, poor construction practices and dust deposition may result in further habitat degradation. Light pollution and noise generation may disturb any wildlife present.	Spatial Extent: site to local Duration: medium term Probability: possible Mitigation: high Overall nature: negative Severity: medium Significance with Mitigation: low Significance without Mitigation: moderate	The Contractor shall be held responsible for any environmental impacts which occur within as well as outside of the project site. The project site will undergo close to 100% habitat loss. Any natural areas surrounding the project site negatively affected by construction activities will be rehabilitated by the contractor at the contractor`s expense.
Aquatic ecosystem and biodiversity impacts. The risk of pollution from accidents, poor construction practices and silt loading may result in further aquatic habitat degradation at the wetland north of the project site.	Spatial Extent: site to local Duration: medium term Probability: possible Mitigation: high Overall nature: negative Severity: medium Significance with Mitigation: low Significance without Mitigation: substantial	The Contractor shall be responsible for any pollution entering the wetland which results from construction activities. The Contractor will be liable for rehabilitation costs.
Spread of invasive alien species The clearance of vegetation and ground disturbance can provide opportunities for the spread of invasive alien species from within or from outside the Project site. As there is already a presence of invasive alien plant species, there is a risk of spreading invasive alien species beyond the construction site.	Spatial Extent: site Duration: short term Probability: possible Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: moderate	Measures will be described in the EMP to help reduce the spread of invasive alien plant species directly and through the dust control measures and the early implementation of the landscape rehabilitation plan. Provided the EMP is implemented appropriately the risk of spreading invasive alien plants should be reduced.

HUMAN ENVIRONMENT		
Compatibility / incompatibility with existing land uses. The informal settlements approximately 400 – 500 metres to the west of the project site will be sensitive to access disruption, noise and dust generation, traffic volumes and/or exposure to pollution, accidents and security risks.	Spatial Extent: site to local Duration: permanent Probability: definite Mitigation: low Overall nature: negative Severity: low Significance with Mitigation: moderate Significance without Mitigation: substantial	Provided the EMP is implemented as described, the construction of the new polices station and package plant should not result in significant conflicts or cause severe disruption to local land-users. Some element of disruption may remain despite the EMP, but good proactive communications with adjacent land-users and Ward Councillors/Committees should help reduce the significance of any such residual impact.
Public health and safety and security. There is a potential risk to public health and safety from general exposure to construction activities on site, construction traffic and where, for example, travel routes are disrupted and exposure to any accidents or pollution events that may occur on or off site. A change in criminal activity may also result during the construction phase – either targeting the construction site or adjacent properties.	Spatial Extent: site to local Duration: short term Probability: possible Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: moderate	The EMP will include specifications to manage site security, restrict unauthorised access and to prevent and respond to accidents that may occur. A plan for the management of contaminated ground encountered or generated will be required to help reduce any public exposure to health risks.
Aesthetic impacts. Poor management of construction waste and earthmoving activities in areas where illegal dumping has taken place may lead to aesthetic impacts through wind-blown litter. Construction activities generally have a negative aesthetic impact on account of the scarred appearance of the landscape.	Spatial Extent: site Duration: short-term Probability: definite Mitigation: medium Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: moderate	The EMP will include specifications for waste management including litter patrols. The implementation of a rehabilitation plan will help to improve the aesthetic quality of the site. Any night time working will be subject to controls and lighting systems will be required not to cause undue 'light pollution'.
Socio-economic impacts. The local community and businesses in the Lusikisiki area, at a minimum, stand to benefit	Spatial Extent: local Duration: short term, permanent	The use of local labour and the sourcing of construction materials from local suppliers, where practical, can be promoted through the EMP and/or

through the employment opportunities and through the procurement of supplies, materials and plant during construction. The provision of employment and training opportunities during construction will serve to uplift the local community where unemployment levels are high. Revenue to the municipality may also follow through the use of services, e.g. waste disposal.	Probability: definite Mitigation: N/A Overall nature: positive Severity: N/A Significance with Mitigation: N/A Significance without Mitigation: N/A	contract documentation for the construction phase.
Compatibility / incompatibility with municipal service provision. The construction activities will consume water and will generate wastewater and solid waste that will need to be treated / disposed at municipal facilities.	Spatial Extent: local Duration: short term Probability: definite Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: moderate	Promoting responsible resource use and waste minimisation, recycling or reuse will be incorporated into the EMP. Any hazardous waste generated or encountered will need to be removed to an appropriately permitted landfill site.
Heritage resource impacts. Ground disturbance during the construction phase can lead to the discovery of unrecorded graves, artefacts and other features of cultural, historical or archaeological interest.	Spatial Extent: site Duration: short term Probability: possible Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: moderate	The EMP will include specifications to provide for the discovery and protection of any features of potential interest.

d) Mitigation potential for Operation Phase

Table 7: Mitigation Potential for Operational Phase:

Potential Impacts	Impact Rating	Proposed Mitigation
Activity Alternative 1 (Preferred Alternative)		
Direct Impacts		
Pollution of sensitive environments (Wetland) The installation of the on-site FAMSYSTEMS Package Plant creates the potential for sensitive environments (wetland) to become polluted if not maintained correctly.	Spatial Extent: local Duration: long-term Probability: Mitigation: high Overall nature: negative Severity: moderate Significance with Mitigation: low Significance without Mitigation: substantial	Treated effluent from the package plant must be monitored to ensure the effluent meets the special limits listed in Table 3.1 of the Wastewater Limit Values applicable to discharge of waste water into water resources published in the latest version of General Authorisations in terms of Section 39 of the National Water Act 36 of 1998. To ensure the treated effluent meets the Wastewater Limit Values standards, the applicant must provide proof of a dedicated budget for the maintenance of the treatment works, a monitoring plan for the treated effluent as well as a general maintenance plan for the treatment works to DEA before construction begins. The failure to produce a dedicated budget and maintenance plan for the FAMSYSTEMS package plant by the Applicant should be viewed as a FATAL FLAW. In addition to installing the industry leading FAMSYSTEMS package plant, it is proposed that an artificial reed bed be installed on the southern side of the R61 to act as a secondary treatment to the effluent emanating from the package plant.
Surface/Ground Water Pollution **a) Traffic accidents** There is a risk of localised soil pollution from any accidents on the road or car park. The significance of any pollution event would depend on the severity of the accident and/or the nature of materials spilled.	Spatial Extent: local Duration: short-term Probability: possible Mitigation: moderate Overall nature: negative Severity: low Significance with Mitigation: moderate Significance without Mitigation: substantial	A Traffic Impact Assessment has been undertaken to ensure all traffic laws are adhered to. Please find Traffic Impact Assessment in **Appendix G.**

b) FAMSYSTEMS package plant Please see pollution of sensitive environments.	Please see pollution of sensitive environments.	Please see pollution of sensitive environments.
BIOLOGICAL ENVIRONMENT		
Terrestrial ecosystem and biodiversity. Accidents associated with the turning lane to be installed have the potential to pollute the surrounding environment. The significance of any pollution or fire event would depend on the severity of the accident and/or the nature of materials spilled. Noise generation associated with the traffic flows on the new and upgraded road may disturb any wildlife present.	Spatial Extent: local Duration: short-term Probability: possible Mitigation: high Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: moderate	In terms of noise disturbance to wildlife, it is expected that the species present are human tolerant in general and/or will either become acclimatised to any change in noise levels or migrate from the affected area. There are no site noise specific mitigation measures that can be applied or essential given the low sensitivity of the general site.
Aquatic ecosystem and biodiversity. The on-site FAMSYSTEMS Package Plant has the potential to pollute the wetland if it is not maintained correctly or a spill occurs.	Spatial Extent: local Duration: long-term Probability: possible Mitigation: high Overall nature: negative Severity: substantial Significance with Mitigation: low Significance without Mitigation: substantial	The FAMSYSTEMS package plant treatment works will be placed within an impermeable concrete bund with a volume to contain 110% of the maximum volume of the treatment works. Correct maintenance of the package plant will be of utmost importance during the operational phase of the police station. Recommendations concerning the package plant are stated in the executive summary and conclusion of this report as well as the EMPr. In addition to installing the industry leading FAMSYSTEMS package plant, it is proposed that an artificial reed bed be installed on the southern side of the R61 to act as a secondary treatment to the effluent emanating from the package plant.

HUMAN ENVIRONMENT		
Compatibility / incompatibility with existing land uses The new police station will result in increased vehicle emissions and noise generation. The land uses are not considered to be overly sensitive to air emission or noise level changes. Positive impacts on the human environment will include better policing infrastructure for the area which may result in more efficient policing and a reduced crime rate.	Spatial Extent: regional Duration: permanent Probability: definite Mitigation: N/A Overall nature: negative/positive Severity: N/A Significance with Mitigation: N/A Significance without Mitigation: N/A	Vehicle emissions and noise generation from increased traffic volumes is a normal impact when developing an area. A turning lane will be installed on the R61 to accommodate access into the police station for vehicles. A police station in the area has the potential to reduce crime.
Public health and safety, including security. There is a risk of exposure to pollution emanating from a spill occurring at the package plant and any associated pollution events. The significance of any pollution event and the public health risk would depend on the severity of the accident and/or the nature of materials spilled.	Spatial Extent: local Duration: short-term Probability: possible Mitigation: high Overall nature: negative Severity: moderate Significance with Mitigation: low Significance without Mitigation: moderate	The FAMSYSTEMS package plant treatment works will be placed within an impermeable concrete bund with a volume to contain 110% of the maximum volume of the treatment works. Correct maintenance of the package plant will be of utmost importance during the operational phase of the police station. Recommendations concerning the package plant are stated in the executive summary and conclusion of this report as well as the EMPr.
Aesthetic impacts. The police station will form a permanent and prominent feature in the landscape with little option for mitigation. There is a potential for light 'pollution' from the new lighting system to be provided for the police station.	Spatial Extent: local Duration: permanent Probability: definite Mitigation: low Overall nature: negative Severity: low Significance with Mitigation: low Significance without Mitigation: low	The design of the lighting system for the police should aim to prevent light spill to the surrounding areas keeping in mind that lighting is an important security issue in and around a police station. It is inevitable that with time the visual significance of the police station in the landscape will diminish as residents become accustomed to the physical changes in the landscape.

Socio-economic impacts. The provision of the new police station is believed to be integral to promoting the growth and development of Lusikisiki region.	Spatial Extent: regional Duration: permanent Probability: definite Mitigation: N/A Overall nature: positive Severity: N/A Significance with Mitigation: N/A Significance without Mitigation: N/A	Employment by the SAPS in the region. The safety and security of the people will be improved.

12. CONCLUSIONS

a) Construction Impacts Statement

Impacts anticipated during the construction phase are likely to be common to most construction sites and may be controlled through the implementation of a detailed construction Environmental Management Programme (EMPr). The guidelines set out in the EMPr attached as **Appendix F** aim to reduce any unnecessary negative environmental impacts during the construction phase.

b) Operational Impacts Statement

The primary environmental focus during the operational phase will be ensuring that the FAMSYSTEMS package plant treatment works is maintained and operated correctly for its entire lifespan on site.

It is critical that the FAMSYSTEMS package plant is maintained correctly to ensure that the quality of the treated effluent released from the package plant will meet the special limits listed in Table 3.1 of the Wastewater Limit Values applicable to discharge of waste water into water resources published in the latest version of General Authorisations in terms of Section 39 of the National Water Act 36 of 1998. Failure to provide a dedicated budget, maintenance plan and proof of technical competence by the client should be viewed as a fatal flaw for the project.

The primary `non-release' alternative presented in this study is the evaporation pond alternative. This option would see the treated effluent be released into evaporation ponds to ensure no effluent reaches the surrounding environment. It should be noted that if all precautionary measures are undertaken to ensure that the FAMSYSTEMS package plant is maintained correctly i.e. a dedicated maintenance budget, a maintenance plan, monitoring programme or a private maintenance contract, the package plant would only have to operate until such time as phase 1 of the Ingquza Municipality`s WWTW is complete. A definitive time period on when phase 1 of the Ingquza Municipality`s WWTW is not available.

If the SAPS do not have the technical expertise or provide a dedicated budget for the maintenance and operation of the FAMSYSTEMS treatment works, a contract must be signed with an independent service provider for the maintenance and monitoring of the package plant treatment works with the understanding that once the police station is connected to the municipal WWTW, the package plant will be decommissioned. This contract would ensure the package plant is maintained correctly until such time as the municipal WWTW is operational.

Emergency and action plans regarding the on-site package plant treatment works must be submitted to relevant authorities before the treatment works becomes operational. An emergency and maintenance plan must be submitted to DEA by the Applicant before construction begins.

c) Cumulative Impacts Statement

In terms of cumulative impacts, a broad level cumulative assessment has been undertaken for this Basic Assessment only. In short, the primary potential cause of cumulative impacts are associated with the package plant treatment works and the treated effluent to be released into the wetland 100 meters north of the project site.

The potential impacts associated with the effluent on the wetland can be seen as temporary if a guarantee from Ingquza Municipality (O.R Tambo Municipality) that the municipal treatment works will indeed go ahead. The time it will take for the proposed municipal treatment works to be operational is unknown and for this reason the following recommendations have been made regarding the maintenance and operation of the on-site treatment works at the police station:

- If the SAPS do not have the technical capacity to maintain the package plant a contract with an independent service provider must be undertaken to maintain and monitor the package plant at least once a month with the understanding that the package plant will be decommissioned once phase 1 of the Inqguza Municipality`s WWTW is complete.

- To ensure the treated effluent meets the Wastewater Limit Values standards, the applicant must provide proof of a dedicated budget for the maintenance of the FAMSYSTEMS package plant, a monitoring plan for the treated effluent as well as a general maintenance plan for the treatment works to be approved by DEA before operation of the package plant.

- Failure to produce a dedicated budget and maintenance plan for the FAMSYSTEMS package plant by the Applicant should be viewed as a FATAL FLAW.

- The treatment works will be placed within a lined, impermeable concrete bund with the capacity to hold 110% of the maximum volume of the treatment works to ensure in the event of any leakage, no raw sewage will enter the soils/groundwater.

- An artificial reed bed is to be installed to act as a secondary treatment to the treated effluent released by the package plant.

- Once phase 1 of the Ingquza municipal WWTW is complete, the SAPS will tie into the municipal sewage system and decommission its own package plant treatment works.

More recommendations regarding the operation of the FAMSYSTEMS package plant are listed below in e).

d) No-Go Alternative Impacts Statement

The No-Go option for the project will involve simply maintaining the status quo, i.e. there will be no development on the proposed site. The No-Go option would mean that effluent from the proposed package plant would not be introduced into the wetland. The No-Go option also means that the Lusikisiki area will continue to have inadequate policing infrastructure.

e) Recommendations

The primary environmental concern regarding the project is the use of the package plant treatment works and the quality of the treated effluent. Alternatives such as installing evaporation ponds to receive the treated effluent from the package plant are viewed as favourable as this option would negate the need to release treated effluent into the wetland system. Recommendations pertaining to the operation of the on-site treatment works have been presented in the Specialist Wetland Study presented in **Appendix D** and below:

1. The quality of the treated effluent released from the package plant has to meet the special limits listed in Table 3.1 of the Wastewater Limit Values applicable to discharge of waste water into water resources published in the latest version of General Authorisations in terms of Section 39 of the National Water Act 36 of 1998.

2. If the SAPS do not have the technical expertise or provide a dedicated budget for the maintenance and operation of the FAMSYSTEMS treatment works, a contract with an independent service provider must be undertaken to service the package plant at least once a month until such time as the police station is connected to the municipal treatment works. The contract must include a maintenance programme as well as monthly monitoring of the treated effluent to be presented to DWA (Mthatha). The contract must be presented to the relevant authority before operation of the treatment works. The contract will contain the following deliverables:

    - The qualified service provider will visit the plant monthly during the normal operation of the plant and check the operation and efficiency of the plant.

    - The qualified service provider will communicate with the operator and management of the plant and inform the client of any changes that need to be made to improve the operation of the plant or to ensure continued operation taking into account new conditions that occur, such as increased occupancy.

- The qualified service provider will do whatever tests are required on site to establish the efficiency of the plant and although these tests will be reported, they shall not constitute tests for acceptance by the authorities.

- In addition of the company tests, the following tests will be done by an approved laboratory for submission to the authorities:

    - Test to be completed
        - Faecal coliforms
        - PH
        - Electrical Conductivity
        - COD
        - Ammonia as Nitrogen
        - Suspended solids

- Samples will represent the normal operation of the plant and shall not be adapted, diluted or changed in any manner to try to alter the test results. Samples will be tested by a registered laboratory and in accordance with the standards required by Department of Water Affairs.

- The qualified service provider will issue a written report monthly confirming findings and proposals, including all information that may be required by the authorities for the evaluation of the operation of the plant.

- If required, as part of this agreement the qualified service provider will retrain operating staff, to ensure that a qualified operator is available at all times. Certificates must be issued.

- Where required the qualified service provider will supply specialised consultancy services to the plant operator. Where these services fall within the normal operation of the plant in accordance with the design specifications, these services will be supplied at no cost.

3. Failure to produce a dedicated budget and maintenance and operation plan for the FAMSYSTEMS package plant by the Applicant should be viewed as a FATAL FLAW.

4. The treatment works will be placed within a lined, impermeable concrete bund with the capacity to hold 110% of the maximum volume of the treatment works to ensure in the event of any leakage, no raw sewage will enter the soils/groundwater.

5. If the competent authorities deem it unfavourable to release treated effluent into the wetland system, as an alternative, evaporation ponds should be installed to receive treated effluent from the package plant. This would negate the need to release treated effluent into the wetland system.

6. An artificial reed bed is to be installed to act as a secondary treatment to the treated effluent released by the package plant.

7. If the competent authorities deem it unfavourable to release treated effluent into the wetland system, as an alternative, evaporation ponds should be installed to receive treated effluent from the package plant. This would negate the need to release treated effluent into the wetland system.

8. Once phase 1 of the Ingquza municipal WWTW is complete, the SAPS will tie into the municipal sewage system and decommission its own package plant treatment works.

9. A maintenance programme for the package plant must be submitted by the Applicant to DEDEA (Mthatha) for monitoring purposes.

10. The Applicant must develop an emergency action plan covering all foreseeable emergencies which might occur – however remote – including spillages of sewage or sludge from the treatment works.

11. The relevant DWA authorisation must be obtained before operation of the package plant commences. The DWA authority should include a time limitation for the SAPS to connect to the municipal WWTW once phase 1 is complete.

12. The construction of the new police station and package plant treatment works should not be allowed to proceed without approval and implementation of the Construction Environmental Management Programme (EMPr) attached as **Appendix F.**

13. The EMPr must be legally binding on all contractors and subcontractors operating on site. Contractors and subcontractors must accept responsibility for abiding by the environmental specifications and penalty clauses (e.g. fines) must be included in the contract documentation and applied in event of non-conformance.

14. An external independent Environmental Control Officer (ECO) must be appointed to undertake site inspections for the duration of the construction phase (from site preparation through to handover). The frequency of the site inspections are described in the EMPr.

15. All construction staff must undergo environmental awareness training and must be made aware of the consequences should the specifications of the EMPr and the conditions of the DEA authorisation be contravened.

16. Construction work should be limited to the immediate area only. Everything outside of the construction area must be regarded as no-go, particularly where private property and sensitive natural areas are involved.

17. Should borrow pits be required for the Project the prescribed process described in the Minerals and Petroleum Resources Development Act 28 of 2002 must be followed and a permit obtained from Department of Minerals and Energy (DME).

18. A complaints register must be developed and maintained. The register must record the complainant, the complaint and the measures taken to address the issue of concern.

19. All precautions specified in the MSDS must be applied when using the chemicals.

20. All chemicals and other possible pollutants and/or contaminants must be stored in a designated enclosed area under lock and key. Chemical stores must be located more than 100m from any water body and at least 50m from the property boundary.

Given the discussion above, it is predicted that – with the correct management and implementation of mitigations measures – the impacts on the natural environment and on the neighbouring public will be reduced to within acceptable levels.

SECTION B: DEA BASIC ASSESSMENT FORM

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information:

- DEA acceptance of application
- DEA Waste Licence reference number
- Request for HIA by SAHRA
- Advert
- DEA acknowledgement of receipt of Draft BAR
- FAMSYSTEMS package plant technical information
- SAPS structural design report
- Civil report
- Geotechnical report
- Traffic impact assessment
- Declaration of independence for specialist
- DWAF waste water limits
- Lusikisiki crime statistics (2003/4 – 2010/11)