

## **PART B: DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME**

### **SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT: Agricultural Expansion on Portion 2 of Farm 92, Tregaron, Sylvania, Sundays River Valley Municipality**

**DEDEAT Reference (ECO6/C/LN2/M/64-2017)**

**February 2018**



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## ABBREVIATIONS

CARA	Conservation of Agricultural Resources Act
CEMPr	Construction Phase Environmental Management Programme
DAFF	Department of Agriculture, Forestry and Fisheries
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EA	Environmental Authorisation
OEMPr	Operational Phase Environmental Management Programme
SEM	Site Environmental Manager

## DEFINITIONS

"EIA Regulations, 2014 (as amended)" - When the Scoping and EIA process for the proposed development was initiated, the reference to "listed activities" in section 24 of NEMAA related to the NEMA EIA Regulations, 2014, published in Government Notice R982, 983, 984 and 985 on the 4 December on 2014, in Government Gazette 38282, and which came into effect on the 8 December 2014. However, subsequent to initiation of the Scoping and EIA process it was brought to the EAP's attention that these regulations had been amended by the publication of GN R326, 327, 325 and 324 in Government Gazette 40772 on the 7 April 2017. Therefore, the proposed Scoping and EIA process has been undertaken in terms of the NEMA EIA Regulations, 2014 (as amended), and the project has been re-advertised in terms of the amended EIA regulations (see Appendix C). **This Draft EMPr** has been prepared in line with the amendments to the NEMA EIA Regulations 2014.

"The Department" - The Department of Economic Development, Environmental Affairs and Tourism, Cacadu Region.

"Commencement" - Any physical activity on site that can be viewed as associated with the clearing and site preparation phase.

## 1.1 INTRODUCTION AND BACKGROUND

The applicant, San Miguel Fruits SA (Pty) Ltd, proposes to expand citrus production at their existing operations on Portion 2 of Farm 92, known as Sylvania, which measures ~243.82ha in extent. Sylvania is an existing working farm and the applicant proposes to transform a portion on the western section of the farm. The farm portion under assessment falls within the Sundays River Valley Municipal area (SRVM) and the nearest town is Kirkwood, which is located ~9.3km northwest of the site. The closest boundary of the Addo Elephant National Park is located ~7.5km north of Sylvania.

The area proposed to be transformed measures ~65ha in extent. Approximately 50ha of citrus is proposed to be established within the development footprint and ~15ha is proposed to be cleared for associated infrastructure (roads, irrigation, dam etc.). Irrigation of the proposed agricultural development requires the construction of a new dam with a capacity to store ~30 000m<sup>3</sup> (~2.1ha footprint) of water, as well as the installation of irrigation pipelines of varying diameters. Drip irrigation will be utilised for the irrigation of citrus orchards.

Additional power supply will be required in order to pump the irrigation water into and out of the proposed new dam. This will take the form of a 150kVA line and will require the installation of a 22kV/400v transformer (200kVA). An Eskom representative has confirmed that there is sufficient capacity on the Nooitgedacht Skilpad 1 22kV line to provide the additional electrical infrastructure. Confirmation has been included in Appendix I.

Access to the farm is gained from two existing access points on the farm, along the gravel DR01999 road. During the wet season, when it is not possible to cross the With River via the existing low-level crossing, access will be gained from DR02006 via the municipal road network through Bersheba.

The existing buildings on Sylvania are proposed to be used for the storage of vehicles, pesticides and herbicides, as well as to provide administrative support to the development. In addition, the administrative facilities at another farm (known as Mfuleni) owned by the applicant, located ~2km south of Sylvania, are also proposed to be utilised for the expanded agricultural development on Sylvania. Therefore, no additional services infrastructure is necessary to support the proposed agricultural expansion on the farm.

The proposed expansion of agricultural activities on Sylvania can be divided into the following phases, namely:

- Preconstruction Phase
- Construction Phase
- Operational Phase

Activities to be undertaken during the Construction Phase include the following:

- Clearing of indigenous vegetation;
- Landscaping and levelling the site for citrus orchards;
- Establishment of internal unpaved service roads and laydown areas;
- Construction of a new irrigation dam;
- Installation of internal water reticulation and irrigation infrastructure;
- Planting of orchards and windbreaks (if necessary);
- Upgrading of an existing low-level crossing over the Wit River and associated approach roads; and
- Upgrading of an existing access road.

The proposed Scoping and EIA process has been undertaken in terms of the NEMA EIA Regulations, 2014 (as amended). **This Draft EMPr** has been prepared in line with the amendments to the NEMA EIA Regulations 2014. In terms of the NEMA EIA Regulations, 2014 (as amended), the project requires full Scoping and EIA, prior to the commencement of any activities on the site.

### 1.1.1 Activities and Regulations for which Application has been made:

<p><b>DEDEAT Reference Number</b> EC06/C/LN2/M/64-2017</p>
<p><b>Applicant</b> San Miguel Fruits SA (Pty) Ltd</p>
<p><b>Location of Activity</b> Portion 2 of Farm 92 Tregaron, Sylvania, in the Sundays River Valley Municipality</p>
<p><b>Activity Description</b></p> <p>The applicant, San Miguel Fruits SA (Pty) Ltd, proposes to expand citrus production at their existing operations on Portion 2 of Farm 92, known as Sylvania, which measures ~243.82ha in extent. The applicant proposes to transform a portion on the western section of the farm, which measures ~115 ha. The area proposed to be transformed within the ~115ha area under assessment, measures ~65ha in extent. Approximately 52.5ha of citrus is proposed to be established within the development footprint and ~12.5ha is proposed to be cleared for associated infrastructure (roads, irrigation, dam etc.). Irrigation of the proposed agricultural development requires the construction of a new dam with a capacity to store ~30 000m<sup>3</sup> (~2.1ha footprint) of water, as well as the installation of irrigation pipelines of varying diameters. The existing buildings on the farm are proposed to be used for the storage of vehicles, pesticides and herbicides, as well as to provide administrative support to the development.</p> <p>The existing buildings on Sylvania are proposed to be used for the storage of vehicles, pesticides and herbicides, as well as to provide administrative support to the development. In addition, the administrative facilities at another farm (known as Mfuleni) owned by the applicant, located ~2km south of Sylvania, are also proposed to be utilised for the expanded agricultural development on Sylvania. Therefore, no additional services infrastructure is necessary to support the proposed agricultural expansion on the farm.</p> <p><b>Irrigation Infrastructure</b></p> <p>A portion of the Lower Sundays River Water Users Association canal is located within the area under assessment and therefore, the irrigation water required for the proposed agricultural expansion is proposed to be pumped from this portion of the canal into a proposed new dam via a pipe with an internal diameter of 355mm and an approximate length of 200m. It is anticipated that the proposed dam will be required to have a capacity of 30 000m<sup>3</sup> with a footprint of 2.06ha and a maximum wall height of 5 metres. Water will be pumped from the dam into the orchards (~70%), as well as gravity fed (~ 30%).</p> <p>Irrigation water will be reticulated within the orchards via a network of underground pvc irrigation pipes and valves, with varying internal diameters (60mm to 160mm). The applicant proposes to utilise drip irrigation as the preferred method of water delivery to the trees within the orchards.</p>

Additional power supply will be required in order to pump the irrigation water into and out of the proposed new dam. This will take the form of a 150kVA line and will require the installation of a 22kV/ 400v transformer (200kVA).

**Access**

Access to the farm is currently gained off the gravel DR01999. The DR01999 bisects the farm in a north-south direction and there are two existing access points from the road which provide access to the western and eastern sections of Sylvania. An existing low-level water crossing which crosses the Wit River, located within the farm, will be utilised to provide access to the proposed agricultural area from the existing orchards located adjacent to the eastern bank of the river. During wet seasons or periods when the internal roads crossing the Wit River are impassable, access to the main road network (DR02006) will be gained via the existing gravel road situated alongside the LSRWUA Canal through Bersheba. Finally, several internal, unpaved roads, will be required to service the proposed agricultural area.

**Construction Phase (Site Preparation)**

The proposed development will entail the following construction phase activities on the site:

- Clearing of indigenous vegetation;
- Landscaping and levelling the site for citrus orchards;
- Establishment of internal unpaved service roads;
- Construction of new irrigation dam;
- Installation of internal water reticulation and irrigation infrastructure; and
- Planting of orchards and windbreaks (if necessary).

**Operational Phase**

The following operational phase activities are associated with the project:

- The establishment of citrus orchards of varying cultivars;
- Water for the development will be supplied from the LSRWUA canals, which will be reticulated from the proposed new balancing dam;
- Only drip irrigation is proposed for the irrigation of citrus orchards; and
- It is anticipated that several additional seasonal and permanent employment opportunities will be created by the project.

1.1.1.1 Listed activities according to GN R327, 325 and 324 requiring Environmental Authorisation in terms of the NEMA EIA Regulations, 2014 (as amended).

Activity Number	Project Component
<b>GN R327 (Listing Notice 1 – Basic Assessment)</b>	
<p>19. <i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</i></p>	<p>A watercourse, the Wit River, has been identified on site. It is proposed that an existing low-level crossing be utilised to access the proposed agricultural area along the western boundary of the Farm.</p> <p>The upgrading and maintenance of this existing crossing to a standard necessary to provide suitable access may require the depositing of material, excavation, removal or moving of soil, sand, pebbles or rock of more than 10 cubic metres from the watercourse.</p>
<b>GN R325 (Listing Notice 2 – full Scoping &amp; EIA)</b>	
<p>15. <i>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for—</i></p>	<p>The proposed agricultural development will entail the clearance of up to 65 hectares of vegetation, most of which is anticipated to be indigenous.</p>
<b>GN R324 (Listing Notice 3 – Basic Assessment)</b>	
<p>2. <i>The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres.</i></p> <p>a. <i>In Eastern Cape</i></p> <p>ii. <i>Outside urban areas, in:</i>            (dd) <i>Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i>            (ff) <i>Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; or</i></p>	<p>In order to ensure sufficient supply of irrigation water for the proposed agricultural development, it is proposed that a new irrigation dam, with an anticipated capacity of approximately 30 000 cubic metres, be constructed.</p> <p>The area under assessment is located outside of an urban area, in the Eastern Cape and approximately 7.5 kilometres from the nearest boundary of the Addo Elephant National Park. The area under assessment has been identified as a Terrestrial CBA (BLMC2) and an Aquatic CBA (ABLMC 2b) in terms of the Eastern Cape Biodiversity Conservation Plan.</p>
<p>4. <i>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</i></p> <p>a. <i>Eastern Cape</i></p> <p>i. <i>Outside urban areas:</i>            (ee) <i>Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i>            (gg) <i>Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas;</i></p>	<p>A number of internal unpaved service roads will be required to provide access within the orchards. The width of these roads will vary between 4m and 10m wide.</p> <p>The area under assessment is located outside of an urban area, in the Eastern Cape and approximately 7.5 kilometres from the nearest boundary of the Addo Elephant National Park. The area under assessment has been identified as a Terrestrial CBA (BLMC2) and an Aquatic CBA (ABLMC 2b) in terms of the Eastern Cape Biodiversity Conservation Plan.</p>

<p>23. <i>The expansion of –</i></p> <p><i>(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs—</i></p> <p><i>(a) within a watercourse;</i></p> <p><i>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</i></p> <p><i>a. Eastern Cape</i></p> <p><i>i. Outside urban areas:</i></p> <p><i>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p><i>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas;</i></p>	<p>A watercourse, the Wit River, has been identified on site. It is proposed that an existing low-level crossing be utilised to access the proposed agricultural area along the western boundary of the Farm.</p> <p>The existing crossing is proposed to be upgraded and maintained to a standard necessary to provide suitable access. The footprint of the existing crossing is likely to be increased by 10 cubic metres or more within the watercourse and within 32 metres of a watercourse.</p> <p>The area under assessment is located outside of an urban area, in the Eastern Cape and approximately 7.5 kilometres from the nearest boundary of the Addo Elephant National Park. The area under assessment has been identified as a Terrestrial CBA (BLMC2) and an Aquatic CBA (ABLMC 2b) in terms of the Eastern Cape Biodiversity Conservation Plan.</p>
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## 1.2 DURATION OF AUTHORISATION

Should an EA be issued in respect of the project, the duration of the authorisation will be indicated in said document.

## 1.3 ENVIRONMENTAL MANAGEMENT PROGRAMMES

Environmental Management Programmes (EMPr), or Environmental Management Frameworks (EMF), serve to ensure that environmental impacts associated with particular activities are monitored, minimised and mitigated for the duration of the project. The practical management measures that should be employed to achieve monitoring and mitigation targets are detailed in the EMPr (DEAT 2004). The EMPr is a dynamic document which should be updated and reviewed on a regular basis so that it may be adapted to changing management styles, and to include improved impact mitigation technology, as well as unforeseen environmental impacts. The EMPr should also be adapted if any changes are made to the project. If such changes will result in significant environmental impacts, which differ from those for which DEDEAT has granted authorisation, such changes must be submitted to the DEDEAT for approval before they are implemented.

This EMPr includes, but is not limited to, the environmental impacts identified in the EIA Report and the proposed mitigation measures that must be employed to minimise the harmful effects that those impacts may have on the environment.

The EIA Report contains a comprehensive description of the project and the receiving environment (Chapters Two & Three), and should be read in conjunction with this EMPr. The lead author of the EMPr is Sandy Wren of Public Process Consultants. A CV outlining the experience and key competencies of the lead author is included in Appendix A of the EIA Report.

In addition to a summary of the impacts, this EMPr contains more detailed information on the following:

- The manner in which mitigation will be implemented
- The scheduling of the implementation of mitigation
- Responsibility and accountability for mitigation actions
- Monitoring and reporting procedures

The life of the agricultural development can be broadly divided into three phases:

A **Construction Phase** - which includes all the surveying, land clearing, and construction activities associated with the establishment of the infrastructure (water supply infrastructure, access and internal roads) and preparation of the site before it can begin operating.

An **Operational Phase** - which constitutes the day to day operation of the site for the duration of its lifetime, until it is discontinued/ decommissioned. This would include the planting, cultivation and harvesting of citrus.

A **Decommissioning Phase** - which includes all the activities associated with the cessation of the described activity at the site. It is not anticipated that the development will be decommissioned, simply because it will be cultivated farm land.

Environmental impacts, management practices and mitigation measures may differ for different phases of the development. However, some impacts will be present in all phases of the development, resulting in some repetition in the EMPr.

***The EMPr report must be read in conjunction with the EIA Report and EA, as these documents may contain additional, detailed information not included in this report.***

#### 1.4 LEGAL REQUIREMENTS

This EMPr does not include all the legislative and regulatory requirements applicable to this development. The representative appointed by the applicant to manage the operation, and the persons responsible for the implementation of the EMPr, must also familiarise themselves with the specific legal requirements applicable to the described activities on site. These may include, but are not limited to:

- Applicable Environmental Law
- Atmospheric Pollution Prevention Act 45 of 1965
- Conditions of Employment Act, 75 of 1997
- Conservation of Agricultural Resources Act 43 of 1983
- Constitution of South Africa No 108 of 1996
- Environment Conservation Act 73 of 1989
- Extension of Security of Tenure Act 62 of 1997
- Hazardous Substances Act 15 of 1973
- Health Act No 63 of 1977
- Labour Relations Act 66 of 1995
- Land Reform (Labour Tenants) Act 3 of 1996
- National Building Regulations and Building Standards Act 103 of 1977
- National Environmental Management: Biodiversity Act 10 of 2004
- National Environmental Management Act 107 of 1998
- National Environmental Management: Air Quality Act 39 of 2004
- National Heritage Resources Act 25 of 1999

- National Road Traffic Act 93 of 1996 – GNR 225 of 17 May 2000
- National Veld and Forest Fire Act 101 of 1998
- National Water Act 36 of 1998
- Nature Conservation Ordinance Act 19 of 1974
- Noise Control Regulations GN R 154 in Government Gazette No. 13717 of 10 January 1992
- Occupational Health and Safety Act of 1994
- The Hazardous Substances Act 115 of 1973
- Local bylaws
- Provincial legislation

# **PART A: CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (CEMPr)**

**Agricultural Expansion on Portion 2 of Farm 92, Tregaron, Sylvania,  
Sundays River Valley Municipality**

**DEDEAT Reference (ECO6/C/LN2/M/64-2017)**

**February 2018**



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## **Part A CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (CEMPr)**

During the Construction Phase, land will be cleared of vegetation and prepared for the establishment of citrus orchards. This will include the construction of a new irrigation balancing dam, the establishment of water supply infrastructure, as well as the establishment of internal unpaved service roads, the upgrading of an existing access road, as well as the upgrading of an existing low-level crossing over the Wit River. It will further entail the levelling and landscaping of the site to provide runoff control, as well as allow for the planting of windbreaks (if necessary).

The vegetation clearing, site preparation, levelling, landscaping, and planting will be done both by hand and with the aid of suitable earth moving equipment (excavators, bulldozers, TLBs, etc.).

Environmental impacts associated with the Construction Phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the EIA Report.

### **A.1 MANAGEMENT ACTIONS**

The management actions outlined below indicate the actions to be taken to minimise the potential negative impacts that this phase may have on the environment, as well as measures to enhance the potential benefits.

Impact	Mitigation
<b>Ecology</b>	
Loss of vegetation due to clearing	<ul style="list-style-type: none"> <li>• Adopt the recommended biodiversity no-go areas indicated in the final layout plan.</li> <li>• The national biodiversity target for Sundays Thicket is retained in the area recommended for potential agricultural expansion.</li> <li>• Albany Alluvial Vegetation is avoided by adopting the proposed no-go areas.</li> <li>• If windbreaks are to be planted, plant indigenous windbreaks, if possible.</li> <li>• Rehabilitation of disturbed areas post establishment with indigenous species, if necessary (as this should be avoided if bullet 1 above is implemented). Plants, however, can be used in the ‘rehabilitation’ of other disturbed areas on the farm. Succulents, such as the Aloes, will be easier to transplant and should be used.</li> <li>• Control and management of alien invasive plants, such as <i>Opuntia ficus-indica</i> and <i>O. aurantiaca</i> within areas not proposed for development.</li> <li>• Audit reporting by the Environmental Control Officer during construction/ clearing of orchard areas.</li> <li>• Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.</li> </ul>
Loss of Critical Biodiversity Area & Ecological Support Area due to clearing	<ul style="list-style-type: none"> <li>• Adopt the recommended biodiversity no-go areas indicated in the final layout plan.</li> <li>• The national biodiversity target for Sundays Thicket is retained in the area recommended for potential agricultural expansion.</li> <li>• Albany Alluvial Vegetation is avoided by adopting the proposed no-go areas.</li> <li>• If windbreaks are to be planted, plant indigenous windbreaks, if possible.</li> <li>• Rehabilitation of disturbed areas post establishment with indigenous species, if necessary (as this should be avoided if bullet 1 above is implemented). Plants, however, can be used in the ‘rehabilitation’ of other disturbed areas on the farm. Succulents, such as the Aloes, will be easier to transplant and should be used.</li> <li>• Control and management of alien invasive plants, such as <i>Opuntia ficus-indica</i> and <i>O. aurantiaca</i> within areas not proposed for development.</li> <li>• Audit reporting by the Environmental Control Officer during construction/ clearing of orchard areas.</li> <li>• Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.</li> </ul>

Loss of species of conservation/ special concern due to clearing	<ul style="list-style-type: none"> <li>• As many <i>Tritonia dubia</i> to be rescued and translocated, elsewhere on the farm e.g. within the 20m buffer areas of the surface water run off areas.</li> <li>• As many of the other species should be rescued and translocated elsewhere on the farm, noting that other areas outside the proposed agriculture do support most of the other species. It should be noted that some of the species are weedy, pioneers which establish very easily where disturbance has occurred, especially <i>Mesembryanthemum aitonis</i>, <i>Drosanthemum hispidum</i>, and <i>Delosperma ecklonis</i>. Focus should therefore be on the Aloes, bulbs and other vygies.</li> <li>• License applications to the Department of Economic Development, Environmental Affairs and Tourism for the protected species.</li> <li>• Rehabilitation of disturbed areas with these species, as soon as possible.</li> <li>• Audit reporting by the Environmental Control Officer during establishment and rehabilitation.</li> </ul>
Fragmentation of natural habitat due to clearing	<ul style="list-style-type: none"> <li>• Adopt the recommended biodiversity no-go areas indicated in the final layout plan.</li> <li>• The national biodiversity target for Sundays Thicket is retained in the area recommended for potential agricultural expansion.</li> <li>• Albany Alluvial Vegetation is avoided by adopting the proposed no-go areas.</li> <li>• If windbreaks are to be planted, plant indigenous windbreaks, if possible.</li> <li>• Rehabilitation of disturbed areas post establishment with indigenous species, if necessary (as this should be avoided if bullet 1 above is implemented). Plants, however, can be used in the 'rehabilitation' of other disturbed areas on the farm. Succulents, such as the Aloes, will be easier to transplant and should be used.</li> <li>• Control and management of alien invasive plants, such as <i>Opuntia ficus-indica</i> and <i>O. aurantiaca</i> within areas not proposed for development.</li> <li>• Audit reporting by the Environmental Control Officer during construction/ clearing of orchard areas.</li> <li>• Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.</li> </ul>
Loss of faunal Species of Special Concern due to vegetation clearing	<ul style="list-style-type: none"> <li>• Clearly demarcate intact natural faunal habitat on site as no-go areas for construction vehicles and personnel.</li> <li>• Undertake a faunal search and rescue operation before and during bush clearing phase.</li> </ul>
Destruction of faunal habitat	<ul style="list-style-type: none"> <li>• Retain, rehabilitate and conserve the intact indigenous vegetation and proposed no-go areas as faunal habitat.</li> <li>• Clearly demarcate the no-go areas for development on site prior to commencement of site preparation activities.</li> <li>• All activities undertaken during the site preparation phase must be contained within the disturbance footprint and not encroach onto sensitive vegetation or no-go areas.</li> </ul>
Loss of faunal Species of Special Concern due to poaching	<ul style="list-style-type: none"> <li>• No fauna on site may be harmed.</li> <li>• Monitor pathways in the indigenous habitat on site routinely for the presence of snares.</li> <li>• No-go areas on the site will serve as a refuge for fauna which will be displaced as result of the development.</li> </ul>

Aquatic	
<p><b>Biodiversity and hydrological process loss:</b> Loss of Critical Biodiversity Area and Ecological Support Area ‘buffer’ areas (along the Wit River FEPA) due to clearing of vegetation for agricultural activities</p>	<ul style="list-style-type: none"> <li>• Adopt the recommended biodiversity No-Go areas, with 20m buffer around the Wit River riparian floodplain and active channel riparian area, including around the tributary and natural drainage areas. <ul style="list-style-type: none"> <li>• <i>Wit River and Tributary and Wit River Crossing: Buffer Recommendations (Figure 7.8 in Chapter 7 of EIA Report)</i> The 20m should be measured from the point where the gradients flatten, at the top of vertical or steep inclines, which lead down towards the lower lying floodplain area.</li> <li>• <i>Ephemeral Drainage Areas Buffer Recommendation (Figure 7.8 in Chapter 7 of EIA Report):</i> The 20m buffer should be measured from the centre line.</li> </ul> </li> <li>• Safeguard the biodiversity target areas as indicated in the No-Go areas and adopted in the proposed layout. These areas essentially become CBA.</li> </ul>
<p><b>Biodiversity and hydrological process loss:</b> Potential loss of ‘riparian’ systems (vegetation along the undefined drainage areas) due to clearing of vegetation for agricultural activities</p>	<ul style="list-style-type: none"> <li>• Adopt the recommended 20m buffer as indicated above.</li> <li>• Further comment from the Department of Water and Sanitation with regards to requirements of Section 21c and 21i of the National Water Act (36 of 1998).</li> <li>• Audit reporting by the Environmental Control Officer during establishment of orchards.</li> <li>• Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), which does not permit cultivation <b>within the flood area of a watercourse or within 10m horizontally outside the flood area of a watercourse.</b></li> </ul>
<p><b>Biodiversity and hydrological process loss:</b> Potential loss and disturbance of wetland and riparian habitat along the tributary of the Wit River due to vegetation clearing for the agricultural activities</p>	<ul style="list-style-type: none"> <li>• Adopt the recommended 20m buffer as indicated above.</li> <li>• Further comment from the Department of Water and Sanitation with regards to requirements of Section 21c and 21i of the National Water Act (36 of 1998).</li> <li>• Audit reporting by the Environmental Control Officer during establishment of orchards.</li> <li>• Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), which does not permit cultivation <b>within the flood area of a watercourse or within 10m horizontally outside the flood area of a watercourse.</b></li> </ul>
<p><b>Biodiversity and hydrological process loss:</b> Potential loss of floodplain and riparian system along the Wit River due to clearing of vegetation for agricultural activities</p>	<ul style="list-style-type: none"> <li>• As per impact mitigation measures above.</li> <li>• A water use license application or general authorisation in terms of Section 21c and 21i of the National Water Act (36 of 1998) will be required for the proposed agriculture.</li> </ul>

<p><b>Biodiversity and hydrological process loss:</b> Potential modification of wetland habitat due to loss of floodplain and riparian system along the Wit River due to clearing of vegetation for agricultural activities</p>	<ul style="list-style-type: none"> <li>• Adopt the recommended 20m buffer as indicated above.</li> <li>• Further comment from the Department of Water and Sanitation with regards to requirements of Section 21c and 21i of the National Water Act (36 of 1998).</li> <li>• Audit reporting by the Environmental Control Officer during establishment of orchards.</li> <li>• Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), which does not permit cultivation <b>within the flood area of a watercourse or within 10m horizontally outside the flood area of a watercourse.</b></li> </ul>
<p><b>Hydrological processes and biodiversity loss:</b> Potential sedimentation and erosional impacts on undefined drainage areas due to agricultural activities</p>	<ul style="list-style-type: none"> <li>• Implement the recommended aquatic buffer of 20m as indicated in the proposed layout.</li> <li>• In order to reduce surface water run-off from orchard areas, establish stormwater management measures, including trenches (with indigenous grasses, not concrete lined) to encourage increased infiltration.</li> <li>• Mulching, if feasible, to increase retention of soil moisture <i>in-situ</i> at tree.</li> <li>• Minimizing bare and exposed soils and implementing drip irrigation (as proposed/ standard practice).</li> <li>• Audit reporting by the Environmental Control Officer during orchard establishment.</li> </ul>
<p><b>Hydrological processes and biodiversity loss:</b> Potential sedimentation and erosional impacts on the Wit River and tributary, including dam wetland habitat, due to agricultural activities</p>	<ul style="list-style-type: none"> <li>• Avoid the riparian floodplain areas and implement the recommended 20m aquatic buffers as indicated in the proposed layout.</li> <li>• As per mitigation measures above i.e. stormwater management. A stormwater trench (with indigenous grasses, not concrete lined) to run parallel to the outer edge of the 20m buffer.</li> <li>• A water use license application or general authorisation in terms of Section 21c and 21i of the National Water Act (36 of 1998) will be required for the proposed agricultural expansion.</li> </ul>
<p><b>Biodiversity and hydrological process loss:</b> Cumulative loss of Critical Biodiversity Area and Ecological Support Area buffers due to clearing of vegetation in the larger catchments</p>	<ul style="list-style-type: none"> <li>• Maintain CBA buffer areas and/ or maintain biodiversity pattern and process targets on individual properties proposed for development in the future, and avoid riparian floodplain areas. <i>Catchment mitigation measure not within the control of the Applicant.</i></li> <li>• Ensure revision of the CBA Map to compensate for losses every 5 years. The ECBCP is currently being reviewed. <i>Catchment mitigation measure not within the control of the Applicant.</i></li> </ul>
<p>Cumulative loss and modification of wetland habitat in the larger catchments</p>	<ul style="list-style-type: none"> <li>• Retain wetlands and buffer areas, especially natural wetlands in the N40C catchment. <i>(Catchment mitigation measure not within the control of the Applicant).</i></li> </ul>
<p><b>Socio-economic</b></p>	

Dust generation during the vegetation clearing and site preparation phase	<ul style="list-style-type: none"> <li>• Vegetation must be cleared in a phased manner to avoid large areas of unconsolidated soils.</li> <li>• Topsoil and soil stockpiles must be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation.</li> <li>• A water cart or sufficient watering equipment must be available to wet soils during windy days if wind-blown sand and dust becomes a problem.</li> </ul>
Noise and disturbance during the vegetation clearing and site preparation phase	<ul style="list-style-type: none"> <li>• Limit activities, as far as possible, to working hours (i.e. 7am-6pm weekdays).</li> <li>• Encourage labourers to not make unnecessary noise.</li> <li>• Signage with the contact details of the responsible person must be provided at the site, for residents with complaints in this regard.</li> <li>• A complaints register must be kept to document complaints and the corrective action taken.</li> <li>• No loud music to be allowed on site.</li> </ul>
A number of temporary employment and skills development opportunities will be created during the site clearing and preparation phase	<ul style="list-style-type: none"> <li>• Local labour must be sourced as far as possible, to maximise the economic benefits for the local community.</li> </ul>
Risk to human health and safety due to open excavations and earth moving machinery	<ul style="list-style-type: none"> <li>• Footprints, including site offices, excavations, storage areas, materials lay-down areas, stockpile area, and labourers rest areas must be clearly demarcated or fenced off before site preparation and vegetation clearing commences.</li> <li>• All activities must be limited to the demarcated area.</li> <li>• Open excavations must be kept free of water.</li> <li>• Access to the site must be controlled.</li> <li>• Entry points and access routes to the site must be clearly marked and traffic limited to those areas as far as possible.</li> <li>• Speed travelled by vehicles must be kept to a minimum and speed limits enforced.</li> <li>• Ensure that there is a first aid facility and trained first aiders permanently on site.</li> </ul>
Runaway bush fires	<ul style="list-style-type: none"> <li>• Exotic tree and shrub species at the site must be eradicated and the litter removed from site.</li> <li>• No open fires should be allowed on the site, except in a designated controlled area.</li> <li>• Suitable firefighting equipment should be available on site.</li> </ul>
<b>Waste</b>	

<p>Generation of waste during the vegetation clearing and site preparation phase.</p>	<ul style="list-style-type: none"> <li>• No waste from construction or otherwise, may be disposed of on site.</li> <li>• No waste should be stored on site.</li> <li>• Waste generated at the site should be minimised by reusing and recycling, as far as possible.</li> <li>• All waste that cannot be reused or recycled must be temporarily sorted at site before being suitably disposed of at an appropriately licensed and registered waste disposal facility.</li> <li>• Hazardous waste generated at the site should be disposed of at a suitably licensed hazardous waste disposal facility.</li> <li>• Adequate litter drums or other suitable containers must be located on site to ensure that waste generated on site is disposed of in a suitable and timeous manner.</li> <li>• Suitable potable sanitation facilities must be provided and maintained for the labourers during the vegetation clearing and site preparation phase.</li> </ul>
<p><b>Heritage</b></p>	
<p><b>Direct impact on heritage resources through expansion of agricultural fields and associated infrastructure including dams:</b> Burial Grounds and Graves</p>	<ul style="list-style-type: none"> <li>• The graveyard (see Table 10.4) should be avoided by all development activities. To ensure this, a suitable fence should be erected around the graveyard, at a distance of no less than 5m from the outer perimeter of the graves. This fence should include entry gates to allow visits from relatives and family friends, and access to the graveyard must be allowed in perpetuity. This area should be treated as a no-go area, and its location should be marked on all development maps. No development should occur within 15 meters of the proposed fence line (ie. a 20m buffer area is maintained around the graveyard).</li> </ul>
<p><b>Direct impact on heritage resources through expansion of agricultural fields and associated infrastructure including dams:</b> Archaeological Structures Geological and Paleontological</p>	<ul style="list-style-type: none"> <li>• The areas indicated by the archaeologist (<b>Figure 10.10 in Chapter 10 of the EIA report</b>) should be monitored by a suitably qualified archaeologist during vegetation clearing.</li> <li>• If <i>in situ</i> archaeological resources or human burials are found, work must cease and these findings must be reported to the ECPHRA and SAHRA, and a suitably qualified archaeologist must be contacted.</li> <li>• Training of responsible supervisory personnel, by a qualified palaeontologist in the recognition of palaeontological heritage;</li> <li>• If any palaeontological or archaeological heritage is identified on site, this must be reported immediately to the ECPHRA (Mr Sello Mokhanya, Tel: 043 745 0888; smokhanya@ecphra.org.za). Ideally the fossil material should be left in situ until a palaeontologist has provided input as to how to proceed with regard to mitigation.</li> </ul>
<p><b>Direct impact on heritage resources through expansion of agricultural fields and associated infrastructure including dams:</b> Paleontological</p>	<ul style="list-style-type: none"> <li>• A Fossil Finds Protocol must be implemented during the construction phase (See Chapter 10 of the EIA Report)</li> <li>• Training of responsible supervisory personnel, by a qualified palaeontologist in the recognition of palaeontological heritage;</li> </ul>

	<ul style="list-style-type: none"><li>• If any palaeontological or archaeological heritage is identified on site, this must be reported immediately to the ECPHRA (Mr Sello Mokhanya, Tel: 043 745 0888; smokhanya@ecphra.org.za). Ideally the fossil material should be left in situ until a palaeontologist has provided input as to how to proceed with regard to mitigation.</li></ul>
<b>Traffic</b>	
Traffic safety due to slow moving traffic	<ul style="list-style-type: none"><li>• Additional warning signage should be erected; and</li><li>• Compliance with Health and Safety requirements.</li></ul>

## A.2 ROLES AND RESPONSIBILITIES

The ultimate responsibility for the effective implementation of the EMPr lies with the applicant (holder of Environmental Authorisation (EA)), in this case San Miguel Fruits SA (Pty) Ltd. Responsibility may be delegated to project managers, construction managers or environmental officers appointed by the applicant, during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

The applicant will appoint a Project Manager for the Construction Phase of the proposed development. The *project manager* will be responsible for the *implementation of the EMPr* during the *Construction Phase* of the development.

An independent *ECO* should be appointed to oversee the *implementation of the EMPr* during the *Construction Phase* of the project. The ECO will be responsible for overseeing the implementation of, and monitoring compliance with, the conditions set out in the EA, as well as the Construction Environmental Management Programme (CEMPr). This monitoring role may be supplemented by an internal Site Environmental Officer (SEM) or Site Officer, that will remain on site during the construction phase.

Table 1. Hierarchy of responsibility in the implementation of the EMPr.

<p><b>Project manager</b></p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> <li>• Overall responsibility for management of the development.</li> <li>• Is familiar with the contents of the EIA, EMPr and the conditions of the EA.</li> <li>• Ensures that policy, legislative and relevant environmental documentation is available to the construction manager.</li> <li>• Liaises with construction/ site manager on a regular basis to address any environmental issues (compliance, mitigation, disciplinary action) that may arise.</li> </ul>
<p><b>Construction/ Site Manager</b></p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> <li>• Selects and appoints contractors.</li> <li>• Is familiar with the institutional environmental policies and Codes of Practice.</li> <li>• Is familiar with the EIA, EMPr, EA, and relevant legislation.</li> <li>• Ensures that the information in the EIA, EMPr, EA, and relevant legislation is communicated to contractors.</li> <li>• Ensures that contractors are familiar with institutional Codes of Conduct for contractors.</li> <li>• Ensure that environmental policies, legislation and guidelines are adhered to.</li> <li>• Monitor implementation of the EMPr by conducting regular site visits and meetings.</li> </ul>
<p><b>Environmental Control Officer</b></p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> <li>• Responsible for <i>overseeing and monitoring the implementation of the EMPr</i> during the construction phase.</li> <li>• Is familiar with the EIA, EMPr, EA, and relevant legislation.</li> <li>• Monitors compliance with the EMPr during the operational phase through annual environmental audits.</li> <li>• Report non-compliance or appropriate remedial action.</li> </ul>

<p><b>Site Manager /Site Environmental Officer</b></p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> <li>• Is familiar with the EIA, EMPr, EA, and relevant legislative requirements.</li> <li>• Ensures compliance with the EMPr and EA conditions.</li> <li>• Is familiar with and ensure compliance with the relevant internal institutional policy, and procedural guidelines</li> <li>• Ensures compliance with the relevant institutional policy, and procedural guidelines</li> <li>• Ensures compliance with the legislative requirements.</li> <li>• Implements the EMPr during the operational phase of the development by employing prescribed mitigation and management measures.</li> <li>• Conducts environmental monitoring protocols at the facility.</li> <li>• Conducts regular inspections of the facility in order to monitor compliance with the EMPr.</li> <li>• Takes remedial or disciplinary action where required.</li> </ul>
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Should ownership of the project change, any EA granted in respect of the development must be transferred to the new owner, upon notification of the Department (DEDEAT). The EMPr, EA and Conditions of Approval remain binding on the new owner/ operator of the development.

### **A.3 ENVIRONMENTAL PERFORMANCE MONITORING**

Environmental Performance Monitoring has been defined as the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions must initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or interested and affected parties (I&APs).

#### **A.3.1 Baseline data**

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared.

The following baseline information, where currently not available, must be obtained before vegetation clearing and site preparation commences:

- Extent and location of water bodies on site.
- Surface water quality from the water bodies on site.
- Extent and location of alien invasive plants on site.
- Extent and location of erosion features on site.
- Delineation of the No-Go Areas (including aquatic buffers, sensitive vegetation, biodiversity conservation areas, unsuitable soils and slopes etc.).

Collection of baseline information will ultimately be the responsibility of the applicant. However, these tasks can be delegated to the SEM or Site Officer.

#### **A.3.2 Interested and affected parties**

Neighbours and parties affected by the development must be afforded opportunity to comment on problems and impacts that they may experience as a result of the development, during the construction phase of the project. A complaints register must be kept which details such comments,

as well as the intervention initiated to address the comment or complaint, where appropriate. These comments will be used to adapt and improve existing mitigation measures.

### **A.3.3 Monitoring**

During the vegetation clearing and site preparation phase the following must be monitored:

- Monthly monitoring of the compliance with the conditions of approval as given in the EA, as well as the recommendations contained in the EMPr.
- Monthly monitoring of the extent and location of alien invasive plants on the site.
- Monthly monitoring of the extent and location of erosion around the development footprints.
- Monthly monitoring of the surface water quality of drainage lines on site or when surface water is flowing in the drainage lines.
- Monthly conducting of environmental awareness training sessions with the labourers.
- Monthly monitoring of intact natural areas for snares.

Information gathered during monitoring exercises, as well as the action taken, or operational adjustments made; must be recorded and these reports made available at the request of the DEDEAT.

## **A.4 LEGAL ENFORCEABILITY**

This EMPr is likely to be a condition of the EA, should authorisation for the activity be granted. As such it is a legally binding agreement between the applicant, as well as all his/ her sub-contractors, and the DEDEAT. The EMPr must be included in the contracts (tender documents or otherwise) entered into by the owner/ developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMPr. Should it be found that additional codes of conduct for contractors need to be included in this EMPr, this must be done at the first review opportunity.

## **A.5 IMPLEMENTATION SCHEDULE AND REPORTING**

The management measures outlined for the Construction Phase of the development will take effect as soon as vegetation clearing and site preparation on the site is initiated, while the collection of baseline monitoring information must start prior to the commencement of construction activities.

Water quality monitoring, erosion monitoring, alien plant management and stakeholder input reports will be kept as outlined in Section A.3.3 above, and be made available at the request of the DEDEAT.

Environmental audit reports, as well as reviewed amended EMPr reports will be kept up to date so that they can be made available at the request of the DEDEAT.

## **A.6 AUDIT PROCEDURE AND EMPR REVIEW SCHEDULE**

The environmental audit is systematic, objective investigation of the environmental information of a development to determine to what extent they conform to the environmental standards set out in the EMPr and EA.

During the construction phase the audit reports, as produced by the ECO after periodic (monthly) site visits, will serve as the auditing mechanism. A schedule for site audits in the Construction Phase must be agreed upon during the appointment of the ECO. The ECO must comment on environmental impacts that are not adequately mitigated, as well as mitigation measures that are not effective, and suggest appropriate further management actions. These comments must be included in an amended CEMPr (Construction Phase EMPr) that must be made available to the DEDEAT on request.

## **A.7 ENVIRONMENTAL EDUCATION**

Environmental education must be provided as part of the environmental induction process for the labourers that will be employed on site, prior to the commencement of the vegetation clearing and site preparation processes at the site. The key requirements of the EIR, EMPr and EA will be included in the material which is presented to personnel during the formal environmental induction process.

- Environmental induction will be facilitated by the SEM, or Site Manager/ Farm Manager if no SEM is appointed for the site.
- No personnel will be allowed to work at the site without having passed through the environmental induction process.
- Labourers will be updated continually on pertinent environmental and safety issues during weekly Toolbox Talks by the SEM or Site Manager/ Farm Manager.
- Appropriate signage will be used to inform personnel of environmental conduct in specific areas.

Environmental induction training must include at a minimum:

- Designation of No-Go areas, workers rest areas, and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.
- Procedures to be followed if heritage artefacts are discovered.
- Procedures to be followed if wild fauna are encountered.

## **A.8 REFERENCES**

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.

## **PART B: OPERATION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (OEMPR)**

**Agricultural Expansion on Portion 2 of Farm 92, Tregaron, Sylvania,  
Sundays River Valley Municipality**

**DEDEAT Reference (ECO6/C/LN2/M/64-2017)**

**February 2018**



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**Part B OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (OEMPr)**

During its Operational Phase the site will be under cultivation. This will include the planting, cultivation and harvesting of citrus.

Potential negative impacts associated with the Operational Phase are limited mainly to impacts on the local resources and infrastructure associated therewith, as well as the natural resources (vegetation and soil).

Environmental impacts associated with the Operational Phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the Environmental Impact Assessment Report.

**B.1 MANAGEMENT ACTIONS**

The management actions outlined below, indicate the actions to be taken to minimise the potential negative impacts that the operation of the development may have on the environment, as well as measures to enhance the potential benefits.

Impact	Mitigation
<p><b>Aquatic Features</b></p>	
<p><b>Hydrological processes and biodiversity modification:</b> Potential increased water levels/ saturation in the Wit River and tributary and associated wetlands due to drip irrigation</p>	<ul style="list-style-type: none"> <li>• Safeguarding the riparian floodplain area and 20m buffers (as mentioned above in Construction Phase Aquatic Impact 1), stormwater trenches, minimizing bare and exposed soils, drip irrigation (as proposed/ standard practice).</li> <li>• If feasible, mulching, to increase retention of soil moisture in-situ/at tree and indigenous vegetation strips between orchards.</li> <li>• These buffers and mitigation measures should be maintained and monitored by the Applicant/ Farm Manager.</li> </ul>
<p><b>Hydrological processes and biodiversity loss:</b> Potential chemical pollution in the Wit River, the tributary and associated wetlands, including groundwater</p>	<ul style="list-style-type: none"> <li>• Maintain the recommended 20m buffers (as mentioned above in Construction Phase Aquatic Impact 1) and safeguard the riparian floodplain and active channel floodplain and No-Go areas.</li> <li>• As per Impacts above; and limit vegetation removal during the construction/ establishment phase (Refer Specialist Vegetation Chapter).</li> <li>• As an additional precautionary measure, a shallow trench could be placed strategically, to trap surface run-off (with fertilizer and herbicide substances) i.e. parallel along the outer edge of the 20m buffer. Ideally these should be grassed (indigenous) for absorption of chemicals.</li> <li>• Fertilizer applications should be used at the right time and at the required rates (i.e. excess fertilization can increase available nitrogen or phosphates entering aquatic features).</li> <li>• Use of slow release nitrogen fertilizers are encouraged as this can improve nitrogen efficiency and reduce leaching of nitrogen.</li> <li>• Avoid over irrigation. Drip irrigation is encouraged/ supported (as is the standard practice to reduce loss or over-use of water).</li> <li>• The use of organic fertilizers and mulching is encouraged, as much as possible.</li> <li>• Strict use and management of potential sources of chemical pollution (e.g. pesticides, fertilizers, hydrocarbons from vehicles and machinery, etc.) i.e. waste management procedures.</li> <li>• Chemical pesticides and insecticides used should be the safest and least harmful to the environment. Biodegradable products should be used as far as possible.</li> <li>• International standards to be complied with.</li> <li>• Chemicals and hazardous waste storage areas should be in the existing storage buildings (as proposed).</li> <li>• Hazardous and chemical wastes (includes old containers) should be disposed of at registered landfill sites.</li> <li>• Implement appropriate measures and soil drainage to prevent increase in the salinity of groundwater and surface water features i.e. Wit River and tributary etc.</li> <li>• Audit reporting by the Environmental Control Officer during orchard establishment (to avoid buffer and riparian floodplain area).</li> <li>• These buffers and mitigation measures should be maintained and monitored by the Applicant/ Farm Manager.</li> </ul>

<p><b>Hydrological processes and biodiversity loss:</b> Potential sedimentation and erosional impacts on the Wit River and tributary, including dam wetland habitat, due to agricultural activities</p>	<ul style="list-style-type: none"> <li>• Avoid the riparian floodplain areas and implement the recommended aquatic buffers as indicated in the No-Go areas.</li> <li>• As per mitigation measures in Impact 6 above i.e. stormwater management. A stormwater trench (with indigenous grasses, not concrete lined) to run parallel to the outer edge of the 20m buffer.</li> <li>• A water use license application or general authorisation in terms of Section 21c and 21i of the National Water Act (36 of 1998) will be required for the proposed agriculture.</li> </ul>
<p><b>Hydrological processes and biodiversity loss:</b> Potential loss of Wit River floodplain and riparian area along existing access tracks due to maintenance</p>	<ul style="list-style-type: none"> <li>• Audit reporting by the Environmental Control Officer during orchard establishment, i.e. to prevent widening of the tracks and indiscriminate clearing.</li> <li>• The Applicant, and Farm Manager, to ensure that no work activities or deposition of gravel should occur outside of the existing tracks in the floodplain or riparian habitat, i.e. to prevent widening of the tracks and indiscriminate clearing.</li> </ul>
<p><b>Socio-Economic</b></p>	
<p>Increased employment opportunities.</p>	<ul style="list-style-type: none"> <li>• Use local labour as far as possible.</li> </ul>
<p><b>Traffic</b></p>	
<p>Traffic Safety Impact due to additional traffic</p>	<ul style="list-style-type: none"> <li>• Additional warning signage erected.</li> </ul>
<p>Generation of Dust</p>	<ul style="list-style-type: none"> <li>• Regular maintenance to be conducted by the responsible road authorities.</li> </ul>
<p>Pedestrian Safety - Bersheba</p>	<ul style="list-style-type: none"> <li>• Ensure sufficient warning signage is in place warning motorists of the presence of pedestrians and provide measures to slow vehicles</li> <li>• Appropriate calming measures such as speed humps should be erected on the Bersheba municipal road to ensure traffic is kept to slow speeds reducing the potential for pedestrian related collisions</li> </ul>
<p>Deterioration of the Public Road Network</p>	<ul style="list-style-type: none"> <li>• Given the poor condition of the Bersheba municipal road, the road should be upgraded by the provision of additional gravel material at the cost of the developer.</li> </ul>

## **B.2 ROLES AND RESPONSIBILITIES**

The ultimate responsibility for the effective implementation of the EMPr lies with the applicant (owner/ developer) of the property at the time of the initiation of development, who, in this case would be San Miguel Fruits SA (Pty) Ltd. Responsibility may be delegated to Environmental Officers, or Farm/ Project Managers, representing contractors or the applicant on the site during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

During the Operational Phase of the development the implementation of the Operational Phase Environmental Management Programme (OEMPr) and the conditions of the EA, as well as environmental compliance monitoring, will be the responsibility of an internal Environmental Officer or a Site/ Farm Manager appointed by San Miguel Fruits SA (Pty) Ltd.

Should ownership of the project change, any EA granted in respect of the development must be transferred to the new owner, upon notification of the Department (DEDEAT). The EMPr, EA and Conditions of Approval remain binding on the new owner/ operator of the development.

## **B.3 ENVIRONMENTAL PERFORMANCE MONITORING**

Environmental Performance Monitoring has been defined as, the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions must initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or affected parties.

### **B.3.1 Baseline data**

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared.

Baseline data gathered prior to commencement of the Construction Phase, will be used to compare environmental conditions on the site during the Operational Phase of the development, to past (predevelopment) conditions.

### **B.3.2 Interested and Affected parties**

Neighbours and parties affected by the development must be afforded opportunity to comment on problems and impacts that they may experience as a result of the development, during the Operational Phase of the project. A complaints register must be kept which details such comments, as well as the intervention initiated to address the comment or complaint, where appropriate. These comments will be used to adapt and improve existing mitigation measures.

### **B.3.3 Monitoring**

Once the facility becomes operational the following must be monitored:

- Bi-Annual monitoring of surface water quality from the water bodies on site.
- Annual monitoring of the extent and location of alien invasive plants within the intact vegetation on site.
- Quarterly monitoring of the extent and location of erosion features on site (or after heavy rainfall events).
- Monthly monitoring of intact natural areas for snares

Information gathered during monitoring exercises, as well as the action taken, or operational adjustments made; must be recorded and these reports made available at the request of the DEDEAT.

It is anticipated that the person responsible for the implementation of the OEMPr will also be responsible for environmental monitoring and record keeping for the duration of the project lifetime.

#### **B.4 LEGAL ENFORCEABILITY**

This EMPr is likely to be a condition of the EA, should authorisation for the activity be granted. As such it is a legally binding agreement between the applicant, as well as all his/ her sub-contractors, and the DEDEAT. The EMPr must be included in the contracts (tender documents or otherwise) entered into by the owner/ developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMPr. Should it be found that additional codes of conduct for contractors need to be included in this EMPr, this must be done at the first review opportunity.

#### **B.5 IMPLEMENTATION SCHEDULE AND REPORTING**

The management measures outlined for the Operational Phase of the development will take effect as soon as the facility becomes operational (i.e. once irrigation infrastructure is installed, including the new irrigation dam, and the citrus trees are planted).

Water quality monitoring, erosion monitoring, alien plant management and stakeholder input reports will be kept as outlined in Section B.3.3 above and be made available at the request of the DEDEAT.

Environmental audit reports, as well as reviewed amended EMPr reports will be kept up to date so that they can be made available at the request of the DEDEAT.

#### **B.6 AUDIT PROCEDURE AND EMPR REVIEW SCHEDULE**

Once the land is under cultivation, the landowner must comply with all statutory legislation, as well as all of the recommendations as set out in the EIA. An annual audit must be conducted by a suitably qualified independent ECO, appointed by the landowner during the Operational Phase. These audits must assess the effectiveness of existing management and mitigation measures, and compliance with the OEMPr and conditions of the EA. The findings of the audit reports must feed into the EMPr ensuring that management and mitigation measures are adjusted and updated to ensure that impacts are managed effectively and efficiently. Audit reports must be made available to DEDEAT, at their request.

#### **B.7 ENVIRONMENTAL EDUCATION**

Environmental education must be provided as part of the environmental induction process for the labourers that will be employed on site during the Operational Phase of the development.

- Environmental induction will be facilitated by the SEM or Site Manager if no SEM is appointed for the site.
- No personnel will be allowed to work at the site without having passed through the environmental induction process.
- Labourers will be updated continually on pertinent Environmental and Safety issues during weekly Toolbox Talks by the SEM or Site Manager/ Farm Manager.
- Appropriate signage will be used to inform personnel of environmental conduct in specific areas.

Environmental induction training must include the relevant requirements of the EIA EMPr and EA, and must include at a minimum:

- Explanation of No-Go areas, workers rest areas, and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.
- Procedures to be followed if wild fauna are encountered.
- Fines system to be implemented for poaching of wild fauna.

Weekly toolbox talks must comment on environmental issues on which non-compliance has been noted during periodic audits.

## **B.8 REFERENCES**

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.