

CHAPTER TWO: PROJECT DESCRIPTION

2.1 INTRODUCTION

River Bend Citrus, near Addo in the Sundays River Valley Municipality, is an established citrus farm, which has been in operation in the area for a number of years. The entire River Bend Citrus operation has recently been acquired by San Miguel Fruit SA (Pty) Ltd, who proposed to expand the existing citrus cultivation operation on the farm, in a phased manner over a period of four years, to establish an additional 300 ha of orchards for international export. The outcome of the specialist assessments has recommended 263 ha for expanded agricultural activities. The proposed agricultural expansion will take place over three undeveloped farm portions which currently form part of the existing River Bend Citrus farm, namely:

- Remainder of Farm 82 Wolve Kop (~908 ha),
- Portion 1 of Farm 77 Wellshaven (~22ha), and
- Portion 3 of Farm 77 Honeyvale (~128ha).

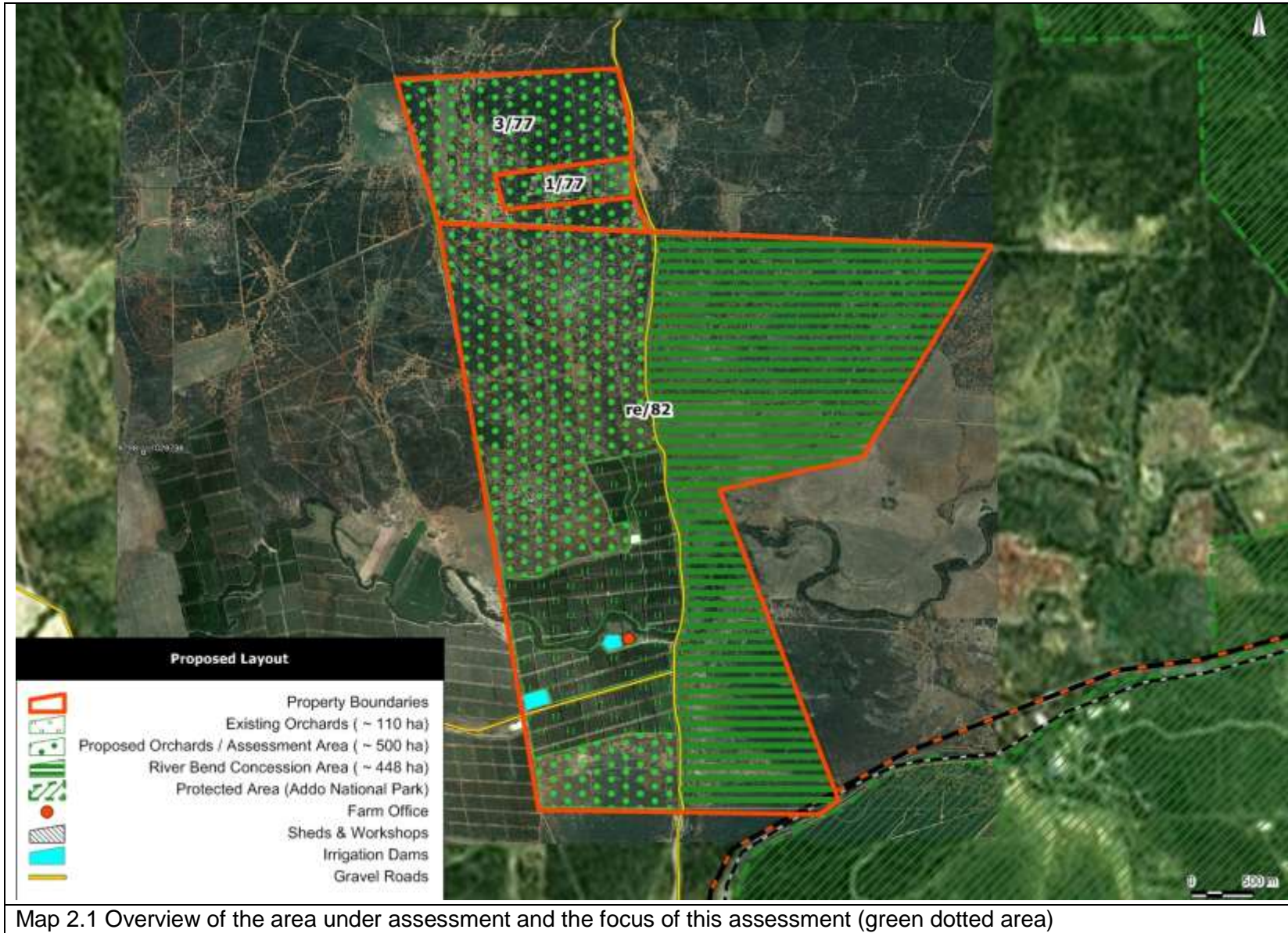
The three adjoining properties measure approximately 1 058 hectares in combined extent and this assessment process focused on 500 ha for the expansion of agricultural activities. These portions of the affected erven are currently used as rangeland for stock and game farming. Map 2.1 below shows the boundaries of the affected properties as well as the area proposed for the extension of citrus cultivation. The affected properties are currently zoned for agriculture and will not require rezoning.

River Bend Concession Area (eastern portion of Re/82)

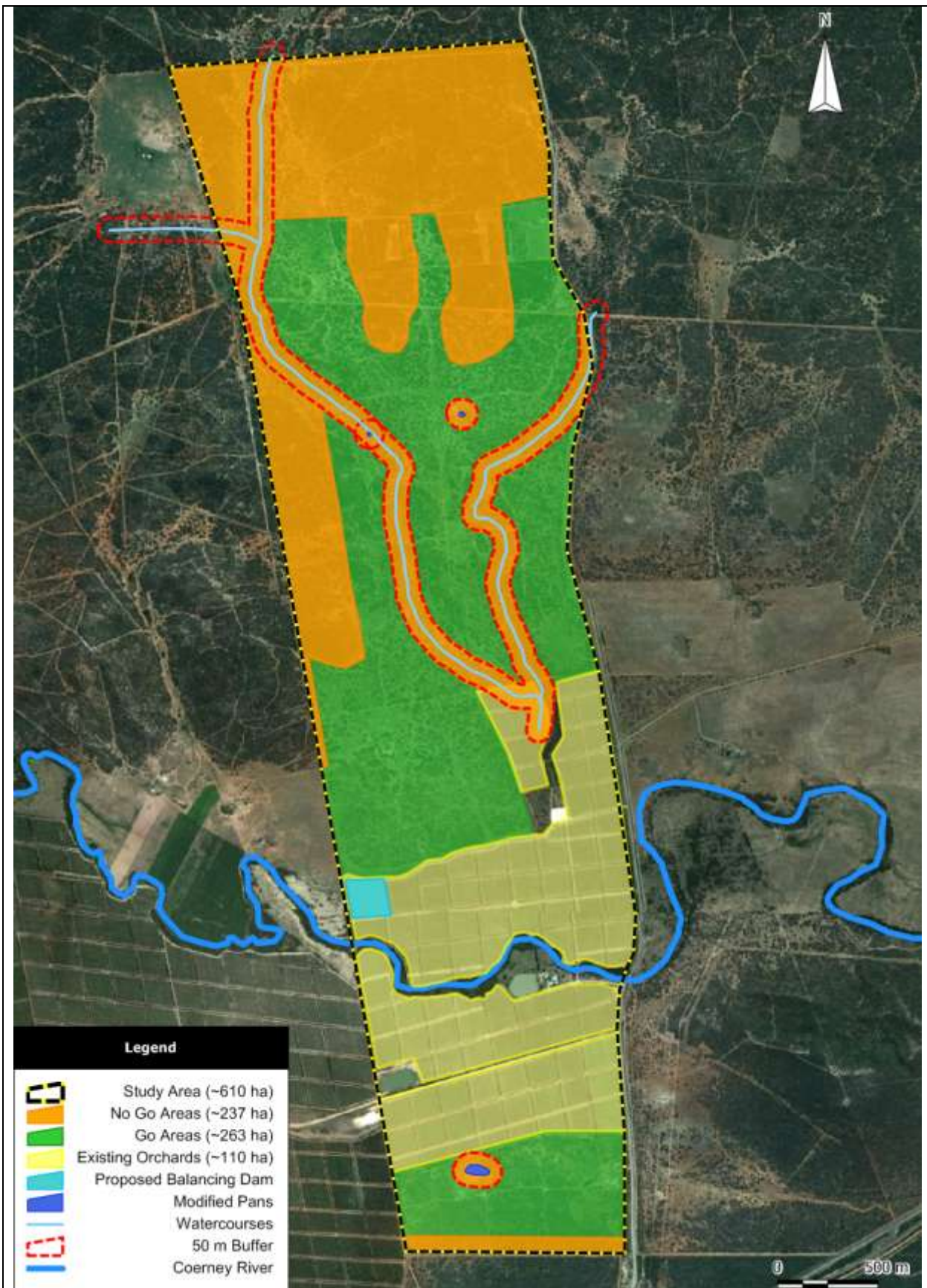
Approximately 448 ha of the Remainder of Farm 82 Wolve Kop (~908 ha), is located east of the Zuurberg road and forms part of the River Bend Concession area with SA National Parks (SANParks). Based on the concession agreement this portion of Re/82 located east of the Zuurberg road is managed as part of Addo Elephant National Park. However the land has not been formally subdivided or transferred to SANParks' ownership, and is currently still zoned for agriculture. Based on the concession agreement with SANParks the portion of Re/82 (east of the Zuurberg road) is to be transferred to SANParks at the end of the initial 50 year concession period. This agreement excludes the citrus farming area; defined in the agreement as the portion of Re/82 located west of the Zuurberg road, including the area known as Small Camp, which was never intended for incorporation as part of the National Park.

Area Proposed for Development

The portion of the study site west of the Zuurberg road (western portion of Re/82; 1/77; & 3/77) represents approximately 610 ha of land, of which approximately 110 ha is currently under citrus production, with the balance (500 ha) undeveloped. This Scoping and EIA assessment has focused on the remaining 500 ha of undeveloped land west of the Zuurberg road. While it was initially proposed to clear 300 ha for the establishment of citrus orchards, the outcome of the assessment assessments recommends that 263 ha is cleared, in a phased manner over a period of four years. Map 2.1 below indicates the area east of the Zuurberg Road (green horizontal lines) which form part of the River Bend Concession area; the area west of the Zuurberg Road, currently under cultivation (green vertical lines) and the area assessed for additional cultivation (green dots).



Developable areas and No-Go areas of the site have been determined through consultation with various project specialists (soil suitability, ecological sensitivity, technical input). The planting plan has been finalised through the recommendations received from the specialist assessments together with technical considerations and an area of approximately 263 ha is proposed for the establishment of additional areas for citrus cultivation. The revised planting plan has been included as Appendix I of this Report. Minor adjustments to the proposed planting plan may be required once the site has been surveyed. However, areas that have been demarcated as No-go (237 ha) will not be considered for development if adjustments to the layout are made. Map 2.2 below indicates the No-Go areas on the site.



Map 2.2. Aerial view of the area assessed (black and yellow line) approx 610 ha, proposed no-go area approximately 237 ha (orange) and area proposed for development approximately 263 ha (green).

2.2 PROJECT BACKGROUND AND OVERVIEW

River Bend Citrus is an existing farming operation with approximately 270 hectares of land currently under cultivation. The study area is located adjacent to existing agriculture and agricultural infrastructure (irrigation, storage sheds, workshops, offices, ablution facilities).



Photo 2.1. Entrance River Bend Citrus Farm.



Photo 2.2. Existing River Bend Citrus Farm Offices.

San Miguel is Argentina's largest lemon producer and early in 2011 acquired the River Bend Citrus farming operation with a view to expanding and diversifying the existing citrus operation on River Bend for the international market. The purchase of the River Bend operation is part of San Miguel's strategy to become a leading citrus business player in the Southern Hemisphere. While San Miguel is currently known for its lemon exports it is proposing to diversify the crops on the River Bend Citrus Farm to export oranges, naartjies and clementines.

The project can be divided into the following stages and phases:

- Preconstruction
- Construction
 - Phase 1 – 2013/14
 - Phase 2 – 2014/15
 - Phase 3 – 2015/16
- Operation

It is important to note that a preparation phase (preconstruction and construction) of approximately 3 to 5 years is required prior to harvesting for export. This period varies dependent on the variety of the crop being produced.

Preconstruction

The fruit proposed to be produced on site is for international export. In order to meet the requirements of export stock, seed (the foundation block seed) is required to be booked and purchased from a certified agency, the Citrus Foundation. This is booked approximately two years in advance in order to secure the seed, which includes a financial deposit.

The seed is provided to a certified nursery for a two year grow-out period, during which the seeds are germinated and the seedlings grown to sapling stage. Meticulous coordination is required between the Citrus Foundation for the purchase of the seed, the nursery for grow-out, and the citrus producer, in order to meet contractual obligations for harvesting and export of the crop. This is an on-going process, which is carefully timed and coordinated to allow the phased development of the site to take place seamlessly over the four year development timeframe proposed by San Miguel.

The preconstruction phase for securing the foundation block seed and growing of the saplings occurs in parallel to site preparation which is outlined below.

Construction

A period of ideally 12 months is required for site preparation. Site preparation entails the following:

- clearing of indigenous vegetation
- landscaping and levelling the site for citrus orchards
- establishment of unpaved internal roads
- installation of water reticulation and irrigation infrastructure
- construction of a balancing dam located
- planting of citrus orchards and establishment of windbreaks

Site preparation needs to be completed to coincide with the planting of the trees, which occurs annually in the last quarter of the year between September to December. San Miguel Fruits SA proposes a three phased crop planting period towards the end of each year, as follows:

- Phase 1 – 2013/14, approximately 110 hectares
- Phase 2 – 2014/15, approximately 80 hectares
- Phase 3 – 2015/16, approximately 73 hectares

The capital investment prior to the harvesting and exporting of the crop is estimated to be approximately R70 million. This can be broken down to approximately R75 000 per ha for the value of the land and approximately R125 000 per ha for site preparation (bush clearing, infrastructure development, irrigation infrastructure etc).

Operation

Once suitably prepared the site is proposed to be used for the cultivation of various citrus varieties for international export. Project activities during the operational phases of the project will entail:

- Equipment required for the new operations will be stored in the storage sheds associated with the existing operations.
- Water for the development will be supplied from the Sundays River Water Users Association's canals which will be reticulated via the balancing dam located in an existing area under cultivation on the eastern boundary of the property.
- It is estimated 250 additional seasonal (8 months of the year) and 20 permanent employment opportunities will be created by the project.

It is proposed that existing infrastructure at the farm be used to provide technical and logistical support to the expanded farming operation.

The following section of the report provides more detailed information on the various project activities.

2.2.1 Vegetation clearing and landscaping

Potentially developable areas (approximately 263 ha) and No-Go areas (approximately 237 ha) of the site have been determined through consultation with various project specialists (soil suitability, ecological sensitivity, technical). The site layout has therefore been finalised, although, minor adjustments may be required once the site has been surveyed. However, areas that have been demarcated as No-go will not be considered for development if adjustments to the layout are made.

Approximately 263 ha of vegetation clearing will commence in a three phased manner, with the aid of both mechanised plant equipment and by hand. Once vegetation has been removed from the development footprints, these areas will be landscaped to provide for the establishment of roads and orchards; and to facilitate stormwater management.

2.2.2 Roads and access

The study site can be accessed directly off the R335 gravel road, as well as from existing service roads currently serving the developed southern portion of the site. Therefore an access road is not required to reach the proposed site. However a number of new internal service roads (vehicle tracks) will be needed to provide reliable access to the orchards and farming infrastructure. It is anticipated the main internal roads will be provided with a gravel wearing course, while the vehicle tracks amongst the individual orchards will remain unpaved. All internal roads will be designed and constructed to accommodate stormwater runoff, e.g. avoid steep gradients, stormwater cut-off / diversion berms, and judicious use of erosion protection.

Internal vehicle tracks crossing the existing watercourses on the site will be required. Such crossings will be limited. It is proposed that concrete culverts within an earthen top of approximately 5 meters wide are provided at identified locations.



Photo 2.3. Internal access road within the existing citrus orchards.



Photo 2.4. Citrus orchards with Beefwood tree windbreaks.

2.2.3 Orchards

In order to maximise the agricultural production potential of the property, the applicant intends to maximise the coverage of citrus orchards on suitable portions of the property. The final size, layout

and configuration of the cultivated land has been determined in consultation with the relevant specialists.

The orchards will also require the establishment of suitable windbreaks. In order to provide optimum yields and quality, citrus crops need to be protected from environmental extremes, including wind. Damage as a result of wind exposure may include reduced growth rates, reduced yields, root damage, bark damage, distorted shape, loss of fruit, as well as lesions and scarring of leaves and fruit (Australian Citrus Growers Inc. 2006). It is an accepted practice to establish exotic Silky Oaks (*Grevillia robusta*) as wind-breaks in the citrus orchards in the Sundays River valley; however Beefwood (*Casuarina* sp.) and Yellowwood (*Podocarpus* sp.) trees are also used. The applicant is also assessing the suitability and feasibility of indigenous alternatives such as Acacia karoo and Acacia xanthophloea.

2.2.4 Irrigation Reservoir / Balancing Dam

The existing orchards are irrigated with water from the Lower Sundays River Water Users Association (SRWUA) supply system. It is proposed that the additional orchards are also irrigated with water from the LSRWUA. Water will be extracted from the canal, under agreement with the SRWUA. Individual farmers are permitted to extract water from the canal only at certain allocated pumping / release times according to a predetermined schedule. Between the allocated pumping / release times, the holder of water entitlements does not have access to the canal water. Therefore, since water is not continually available from the canal, the orchards cannot be irrigated directly from the canal.

In order to secure a reliable supply of irrigation water between release times, supply and demand needs to be balanced by storing irrigation water on site. This will be achieved by storing water in a balancing dam. The new dam, measuring approximately 160m x 150m x 5.5m deep, is proposed to be located on the western boundary of the property within an existing area under cultivation. It would thus require the removal of existing citrus trees for the construction of the dam. A dam with a capacity of 133 000m³ is proposed. The LSRWUA has confirmed water use entitlements for 380ha of citrus. See Correspondence attached as Appendix E.



Photo 2.5. One of the existing irrigation dams on River Bend Citrus Farm.



Photo 2.6. Pumping infrastructure at an existing dam (pump-house & transformer).

2.2.5 Irrigation Infrastructure

Irrigation water from the balancing dam will be reticulated within the orchards via a network of irrigation pipes and valves. Water will be discharged from the dam to the cultivated lands via underground pvc pipes with diameters ranging from 50 mm to 150 mm. Water delivery to crop plants will be achieved with the aid of aboveground polypropylene pipes providing drip irrigation. This will be achieved using a double dripper line system that will be divided into three schedules delivering 2.6litres per hour per dripper. This is the maximum application rate and would only be used during a hot dry spell that is at times associated with blossom/spring time.

2.2.6 Water Use Entitlements

San Miguel Fruit SA, is currently entitled to 380 ha (= 3 420 000 m³) of irrigation water from the system annually. See confirmation attached as Appendix F of this report. This entitles the applicant to 900 mm of irrigation water per hectare per year; or when expressed as volume; 9 000 m³ per hectare per year, i.e. a total volume of 3 420 000m³ per year.

Based on the type of citrus cultivation (type of irrigation & cultivar selection) practiced on the River Bend Citrus farm, it is estimated that the orchards will require approximately 5 625 m³ of water per ha per year. Based on the above water requirements and the water entitlements currently held by the applicant, the available irrigation water is sufficient for the irrigation of 608 ha of citrus orchards. Taking into consideration the ~ 271.2 ha of existing orchards currently being maintained on the River Bend Citrus farms, the remaining water use entitlements are sufficient for the irrigation of an additional 336.8 ha of orchards on the farm and should thus sufficiently meet the requirements of an additional 263 ha under citrus.



Photo 2.7. The existing storage sheds and workshops on the farm.

2.2.7 Chemical Storage and Use

It is anticipated that the agricultural expansion will require the storage and use of additional agricultural chemicals such as fertilisers, herbicides and pesticides. The additional chemicals required for the expanded operations will be stored at the existing storage area for the River Bend Citrus farm. The storage and use of these substances will be in line with existing legislation¹ governing these practices. The existing storage facility (shed) provides for the secure storage and handling of agricultural chemicals, and complies with the requirements of various sustainable

¹ [(e.g. Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act (Act No. 36 of 1947), Plant Improvement Act (Act No. 53 of 1973), Agricultural Product Standard Act (Act No. 119 of 1990), Agricultural Pests Act (Act No. 36 of 1983), Conservation of Agricultural Resources Act (Act 43 of 1983)]

farming accreditations to which the company adheres. All Waste Management, Sanitation & Hygiene, Materials Storage & Handling, as well as Environmental practices at the farm need to comply with the environmental standards of these organisations. The total volume of chemicals to be stored on site will be determined in consultation with the technical specialists during the EIA process.

2.2.8 Electricity Requirements

Additional electricity will be required to service the development, particularly the new irrigation infrastructure and pump station associated with the new dam. Eskom in correspondence attached as Appendix H to this report have provided a quotation for the installation of the new electrical infrastructure, which is for the expense of the applicant.

2.3 PROJECT SCHEDULE

As outlined in section 2.2 above a preconstruction and construction period of approximately five years is required, prior to harvesting the crop. San Miguel Fruits SA proposes a three phased crop planting process towards the end of each year, as follows:

- Phase 1 – 2013/14, approximately 110 hectares
- Phase 2 – 2014/15, approximately 80 hectares
- Phase 3 – 2015/16, approximately 73 hectares

Prior to the receipt of an environmental authorisation, should one be granted, foundation seed block is secured at least two years in advance and is still required to undergo a grow-out period of two years dependent on the variety of the crop. In parallel to the grow-out period is a 12 month site preparation time which needs to coincide with the seasonal planting of the crop, for harvesting.

The required capital investment prior to harvesting or exporting of the crop is estimate to be R70 million and the annual turnover thereafter is estimated to be approximately R60 million once the orchards reach the maturity age of 5 to 6 years old.

The following table provides a preliminary overview of the proposed project schedule and an indication of the anticipated approvals process.

Table 2.1 Proposed project schedule

ACTIVITY	ESTIMATED TIMING
Review of Draft EIA	November 2012 (30 days)
Submit Final EIA to DEDEAT for Approval	Early December 2012 (60 days)
Final Approval for EIA	March 2013
Detailed Planning and Design Phase complete (to include relevant permit & licence applications)	6 months from date of Environmental Authorisation
Site Preparation	12 Months
Phased Construction and Operational Activities	<ul style="list-style-type: none"> • Phase 1 – 2013/14, approximately 110 hectares • Phase 2 – 2014/15, approximately 80 hectares • Phase 3 – 2015/16, approximately 73 hectares

2.4 CAPITAL INVESTMENT AND EMPLOYMENT GENERATION

The total capital value for the project is estimated to be R70 million. The table below provides an overview of the anticipated direct and indirect employment opportunities that will be created during the construction and operational phases of the project.

Table 2.2: Estimated employment opportunities during the construction and operational phase of the project.

	Direct Employment	Indirect Employment	Seasonal Employment
Construction Phase	25 p/a over a two year period	35	-
Operational Phase	20	10	250

The average monthly wage for seasonal employment opportunities (a period of 8 months) is approximately R2000 per month, thus an additional income into the local market of R4 million annually. The average wage for the additional direct employment opportunities is approximately R2500 per month, thus an additional income into the local market of R0.6 million.

2.5 CONCLUDING REMARKS

Alternatives considered in this assessment process are discussed in Chapter Five of this report. The specialist assessments conducted as part of the EIA process, which have informed the proposed layout can be found in Chapters 6 to 9 of this report.