

Lot 2 Albany Highway, North Bannister
Shire of Boddington

**NORTH BANNISTER
RESOURCE RECOVERY PARK
FOOTPRINT EXPANSION**

SUEZ Recycling & Recovery (Perth) Pty Ltd

September 2017

larry smith planning

urban and strategic planning & design

EXECUTIVE SUMMARY

Lot 2 Albany Highway, North Bannister,
Shire of Boddington

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RESOURCE RECOVERY PARK
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SUEZ Recycling & Recovery (Perth) Pty Ltd

September 2017

Prepared by

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in association with :

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executive summary

□ background & purpose

On 31st May, 2016, the SUEZ Recycling & Recovery Australia group of companies (SUEZ) acquired the shares in Perthwaste Pty Ltd including its waste management businesses and the North Bannister Resource Recovery Park (RRP) located in the western portion of Lot 2 Albany Highway, North Bannister [Figure 1 : Location Plan].

The RRP covers an area of approximately 22ha and was approved by the Shire of Boddington in September 2011 as a Class II / III landfill with 11 cells, a total waste capacity of 2.5 million tonnes and an estimated operating life of 18 - 20 years based on an initial annual tonnage of 13,000tpa increasing to 200,000tpa over a nine year period. In November 2016, SUEZ sought and obtained approval from the Department of Water and Environment Regulation (DWER) to increase the annual tonnage throughput from 200,000tpa to 350,000tpa to accommodate SUEZ's previous client needs as well as those of Perthwaste.

Geotechnical investigations by SUEZ since its acquisition of the RRP have identified extensive sub-surface rock in the latter stage cells of the RRP significantly reducing the viability of constructing these cells.

Accordingly and in view of the significantly reduced life of the RRP, SUEZ is now seeking the approval of the Shire of Boddington to the southern expansion of the footprint of the RRP to extend its operating life by an estimated additional 23 years.

SUEZ is concurrently making application to the Department of Water and Environmental Regulation (DWER) to amend the Licence for the current landfill to allow construction of the first two cells of the proposed Expanded Footprint.

□ proponent

SUEZ is a leading multinational waste, recycling and resource recovery service provider and a leader in sustainable resource recovery providing services to more than 56,000 commercial and industrial business Australia wide as well as over 3.7 million households employing over 2100 employees and contractors, across Australia.

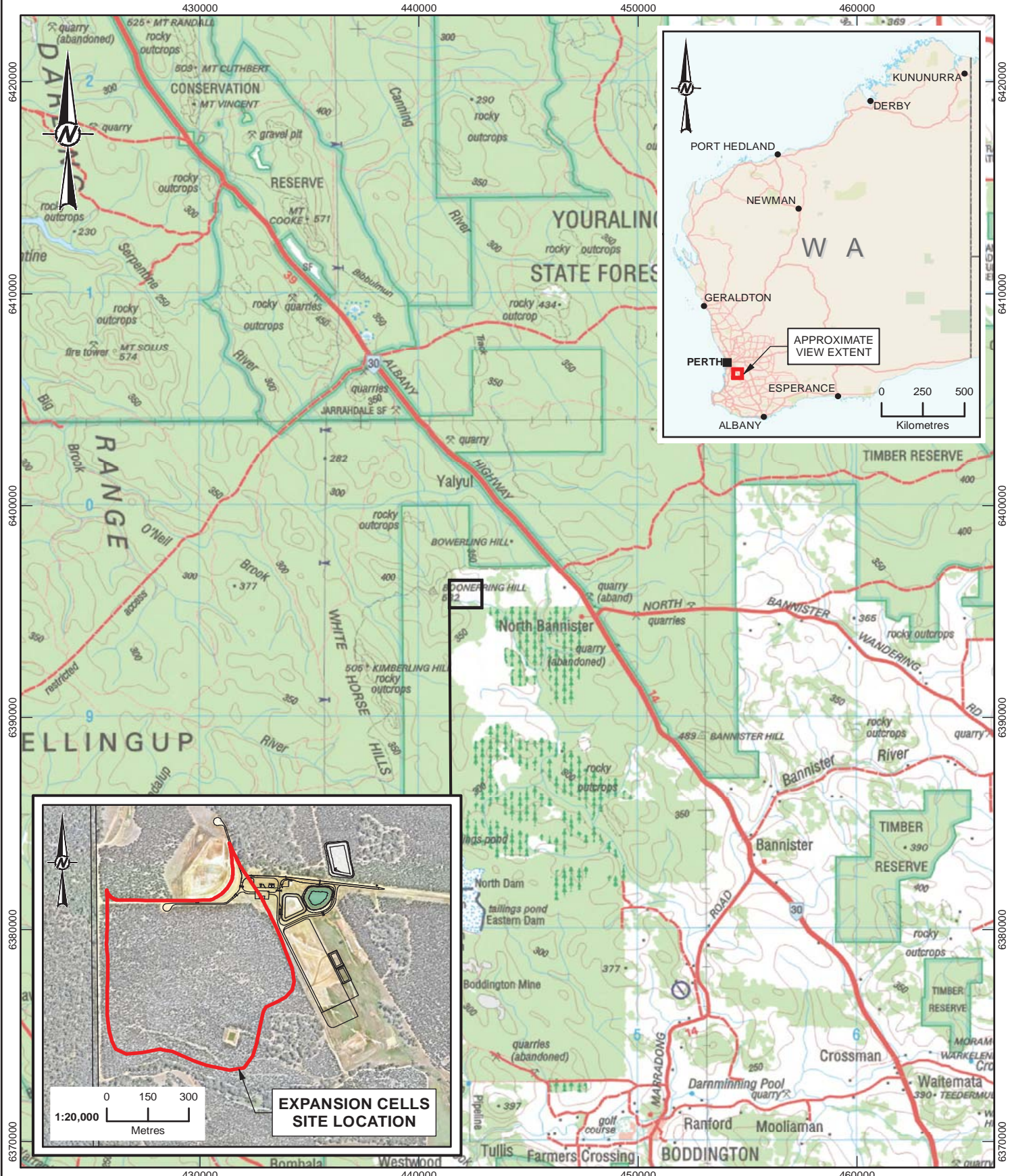
SUEZ has a significant presence in Western Australia and currently provides collection and disposal services for a variety of clients including local governments, service industries and commercial enterprises and operates a number of recycling and resource recovery facilities within WA recovering approximately 200,000 tonnes per annum of material that would otherwise be sent to landfill.

SUEZ also operates community consultation; education and support programs associated with its operations and facilities in Australia and is developing similar programs and relationships with the Boddington and regional community.

□ need for expanded footprint

The WA Waste Strategy notes that the amount of waste being recovered in Western Australia has been increasing steadily for a number of years. However, the State's performance when benchmarked against other mainland states is still poor. A total of 3.2 million tonnes of Municipal and Commercial & Industrial Waste was generated in 2014-15 of which 41% was recycled / recovered with the balance 1.9 million tonnes being sent to landfill.

The Strategy sets targets of 50% diversion from landfill 30 June 2015 and 65% diversion from landfill of material presented for collection in the metropolitan region by 30 June 2020.

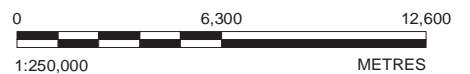


REFERENCE

IMAGE SOURCED FROM GEOSCIENCE AUSTRALIA 250K TOPO.
 AERIAL IMAGERY SOURCED FROM NEARMAP.
 DATED NOVEMBER 2014.
 INSET BASE DATA/ROADS SOURCED FROM STREET PRO DATA 2009.

NOTES

1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50



CLIENT
SUEZ RECYCLING & RECOVERY AUSTRALIA PTY LTD

PROJECT
NORTH BANNISTER RESOURCE RECOVERY PARK

CONSULTANT
 YYYY-MM-DD 2017-08-28

TITL F



DESIGNED CDJ
 PREPARED JRP / SR
 REVIEWED LDP
 APPROVED LDP

PROJECT NO. 1671227 CONTROL 002 R REV. 1

Figure 1 : Location Plan

Path: E:\Suez\North_Bannister\99_PROJECT\1671227_Env_Studies\02_PROD\DUCTION\MXD\002_R\Rev1\1671227-002-R-F001-Rev1.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A4

The Strategy recognises that landfills will continue to play an important role in waste management and that the waste industry plays a pivotal role in providing a range of collection, sorting, processing and safe disposal of waste in Perth and Peel.

Following the closure of a number of landfills in recent years, the Perth Metropolitan region now has only four major Metropolitan landfills that can accept Class II or III wastes and specifically Cockburn, Red Hill, Rockingham and Tamala Park which is expected to close in the near future.

DWER Guidelines for the Siting, Design, Operation and Rehabilitation of Landfills effectively preclude future landfills within the Swan Coastal Plain and effectively limit the siting of future landfills to areas south of the Metropolitan Region, the foot of the Darling Scarp or areas inland thereof.

Based on the 2015-16 total of 3.2 million tonnes of Municipal and C&I Waste generated per annum there is a current need, between the Metropolitan and near Metropolitan landfills including the RRP, for landfill airspace of 1.9 million tonnes decreasing to 1.1 million tpa over time if the 65% recovery rate is achieved. Population growth over ensuing years will see this requirement steadily increase to approach 2 million tpa at 65% recovery. Total medium to longer term capacity including the North Bannister RRP is currently estimated at 1.3 million tpa.

There is clearly a need for additional landfill airspace to be developed on an on-going basis to ensure an adequate supply to meets the needs of a growing Metropolitan population.

Approval of the Expanded Footprint for the North Bannister RRP will enable the growing need for landfill airspace to not only continue to be met in a sustainable manner but in the process thereof reduce the pressure for the development of new “greenfield” landfill sites.

□ **site & surrounding land uses**

The North Bannister RRP is located on Lot 2 Albany Highway, North Bannister approximately 100km south-east of Perth. Lot 2 is situated approximately 5km west of the Highway with the entry road approximately 1.5km north of the Nth Bannister / Wandering Road junction.

Lot 2 has a total area of 390ha and is accessed by sealed road from Albany Highway and prior to development of the RRP, substantial areas of the lot were cleared for the purposes of Blue Gum plantation operated by WA Plantation Resources (WAPRES).

The lands to the north, west and immediate south of Lot 2 are State Forest. The lands to the east, between the RRP and Albany Highway have been substantially planted to Blue Gums with the balance used for grazing of sheep.

The closest “development” to Lot 2 is the Threeways Roadhouse on Albany Highway just north of the North Bannister / Wandering Road junction and approximately 5.5km (straight line distance) east, south-east of the RRP. The roadhouse has been vacant for some time with no signs of it being occupied in the short term. Boddington is located approximately 30km by road south, south-east of Lot 2 (25km straight line distance).

The RRP site is isolated, well removed from any residents and its expansion will not impact the amenity of residents of the region. The potential also exists for future synergies with more intensive development of the lands to the immediate east of the RRP, be it for industrial or intensive agricultural purposes, including power supply through Biogas generation.

□ **local & regional planning context**

Lot 2 Albany Highway is zoned “Rural” under The Shire of Boddington Local Planning Scheme No 2. Table 1 – Zoning Table of the Scheme sets out a number of land uses and the “permissibility” of those uses within the various Zones of the Scheme. Table 1 does not specifically provide for the use of waste disposal / landfill.

The use closest in form to waste disposal / landfill currently provided for under Table 1 is that of “Industry – Noxious” which is defined under the Scheme as:

“industry - noxious: means an industry which is subject to licensing as “Prescribed Premises” under the Environmental Protection Act, 1986 (as amended).”

Table 1 – Zoning Table identifies “Industry - Noxious” as an “SA” use within the Rural Zone requiring the specific approval of Council and advertising for public comment under Clause 6.4 of the Scheme. A landfill is a Prescribed Premises under the Environmental Protection Act.

The Scheme does not define specific Objectives for the Rural Zone but does identify a range of Scheme wide Objectives. The proposed expansion of the RRP is consistent with the Objectives of Local Planning Scheme No 2.

The proposed Expanded Footprint is also consistent with the State Planning Strategy and the Shire’s Local Planning Strategy 2007 and Draft 2016.

Given the estimated construction cost, the proposed Expanded Footprint will require the approval of the Mid-West Wheatbelt (Central) JDAP.

□ existing waste management facility

site access

Access to the RRP is via a 7m wide sealed bitumen road off Albany Highway. The access road is controlled by an electronic boom gate during operating hours and closed after hours by locked, rural steel gate. No public access is permitted to the site [Figure 2 : Existing Site Plan].

The RRP operates 5.00am to 5.00pm Monday to Friday and 5.00am to 1.00pm Saturdays and most Public Holidays. Waste placement and cover operations can continue to 6.00pm.

waste class

The RRP is currently licensed to accept 350,000 tonnes per annum of Class II and Class III putrescible waste consisting primarily of household waste, food waste and non-recyclable waste and non-chemical wastes from commercial and light industrial premises. Special wastes such as asbestos and clinical waste not requiring incineration are buried under controlled conditions.

Toxic, flammable, poisonous, infectious and radioactive wastes are not permitted. The RRP is also licensed for the acceptance of liquid and greenwaste, used tyres and for compost manufacture and soil blending.

Waste entering the site is screened by video cameras at the weighbridge.

cell operation & capping

The RRP as originally approved proposed 11 cells with a total airspace of 3.38 million m³ and a waste capacity of 2.5 million tonnes. The original 11 cells have been subsequently condensed down to six cells.

Development of the landfill is undertaken on a progressive basis of Cells. Filling of Cells 1-3 is nearing completion. SUEZ has commenced construction of Cell 4 which will provide a further 530,000m³ of interim airspace which is likely to be exhausted by late 2019.

Cell preparation and lining comprises a compacted clay underlining, primary lining geomembranes to prevent movement of any leachate into the soil and groundwater below the cell, a drainage layer and covering protecting fabric cushion Geotextile above which the waste is placed.

Once the working cell has reached final profile, the cell is permanently capped. Capping is only undertaken in dry conditions and typically during summer and autumn and comprises an engineered clay cap, drainage layer and sub-soil / topsoil planting layer.



- LEGEND**
- EXISTING LANDFILL FOOTPRINT
 - EXISTING DRAINAGE
 - CONTOUR LINE (2m INTERVAL)
 - CONTOUR LINE (10m INTERVAL)
 - 380 SITE BOUNDARY

REFERENCE

AERIAL IMAGERY SOURCED FROM NEARMAP.
DATED NOVEMBER 2014.

CONTOURS BASED ON TOPOGRAPHIC SURVEYS PROVIDED BY CLIENT.

NOTES

1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

SD1 TO SD3 ARE SURFACE WATER MONITORING POINTS

CLIENT
SUEZ RECYCLING & RECOVERY AUSTRALIA PTY LTD

PROJECT
NORTH BANNISTER RESOURCE RECOVERY PARK

CONSULTANT	DATE	REVISION
	YYYY-MM-DD	2017-09-01
	DESIGNED	L. Du PREEZ
	PREPARED	S. RAFEI
	REVIEWED	L. Du PREEZ
	APPROVED	J. ENNIS-JOHN

Figure 2 : Existing Site Plan

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN HOOPED FROM ISO A3

leachate management

The cells are constructed with an internal engineered leachate collection system with a shared sump. Leachate levels within the cells are regularly monitored and periodic extraction is undertaken by submersible pumps within the sump and directed to the Leachate Evaporation Dams.

surface water management

Surface water on site is channelled from around the southern and eastern edges of the existing landfill to Stormwater Dams. Surface water data collected from the Dams indicates that surface waters are not impacted by the landfill.

groundwater monitoring

Groundwater monitoring bores are currently installed in 18 locations across and surrounding the existing and proposed landfill areas. Groundwater sampling and analysis has been carried out at the site since 2011 with no evidence of contamination to groundwater.

□ proposed expanded footprint**expanded footprint**

The proposed Expanded Footprint has been designed in accordance with Victorian BPEM Guidelines and configured to avoid and thereby retain the remnant vegetation towards the southern portion of Lot 2 [Figure 3 : Proposed Site Plan].

The footprint has been divided into nine cells and will provide an additional 9,915,000m³ of airspace equating to 8,031,000 tonnes providing an estimated life of 23 years at current disposal rates. Cells 14 & 15 within the original footprint (former Cells 5 and 6) provide a further 2,070,000m³ extending the overall life of the RRP by an additional 6 years at current disposal rates.

SUEZ is currently constructing Cell 4 of the original footprint to provide adequate interim airspace and will proceed immediately to construction of Cell 5 within the Expanded Footprint. Construction of the Expanded Footprint will require the progressive clearing of the Blue Gum plantation and will not impact any remnant vegetation.

cell lining & capping

The liner and capping systems will consist of the same layer system as the current landfill.

The maximum waste elevation is approximately 396 m AHD at the landfill crest, extending up to 401.6 m AHD at the central ridge.

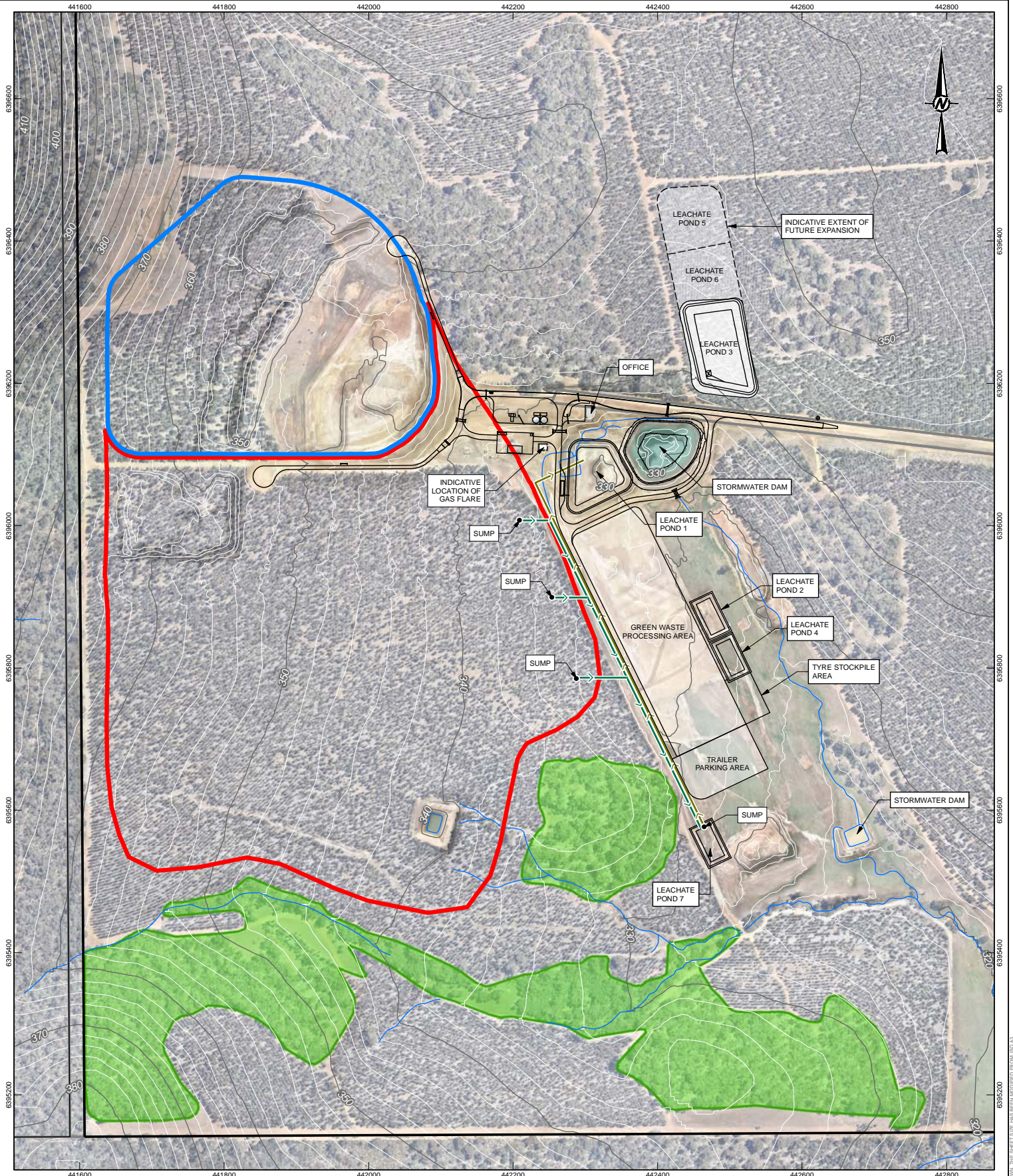
landfill gas extraction

Landfill gas (LFG) is composed of a variety of gases which include methane, carbon dioxide, oxygen, nitrogen, hydrogen and water vapour.

Vertical and horizontal gas extraction wells will be installed during the placement of wastes. A flaring facility will be utilised to control and dispose of the landfill gas extracted. Once the volume of landfill gas generated in the decomposing waste mass increases to a sufficient quality and quantity an energy recovery facility may be used to generate electricity.

leachate management

The Expanded Footprint may require additional leachate ponds to be constructed as the landfill footprint increases. Additional ponds will be constructed, if required, based on the ongoing monitoring and modelling results.



- LEGEND**
- EXISTING LANDFILL FOOTPRINT
 - LANDFILL EXTENSION FOOTPRINT
 - LEACHATE DISCHARGE GRAVITY LINE
 - LEACHATE PUMP LINE
 - 330 TOPOGRAPHICAL CONTOUR AND ELEVATION (m AHD)
 - EXISTING WATERCOURSE
 - SITE BOUNDARY
 - CADASTRAL BOUNDARY
 - NATIVE VEGETATION

REFERENCE
 AERIAL IMAGERY SOURCED FROM NEARMAP.
 DATED NOVEMBER 2014.
 CONTOURS BASED ON TOPOGRAPHIC SURVEYS PROVIDED BY CLIENT.

NOTES
 1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

0 125 250
 1:5,000 METRES

CLIENT
 SUEZ RECYCLING & RECOVERY AUSTRALIA PTY LTD

PROJECT
 NORTH BANNISTER RESOURCE RECOVERY PARK



CONSULTANT	YYYY-MM-DD	2017-09-01
	DESIGNED	L. DU PREEZ
	PREPARED	S. RAFEI
	REVIEWED	L. DU PREEZ
	APPROVED	J. ENNIS-JOHN

PROJECT NO. 1671227	CONTROL PLANNING APPROVAL	REV. 0	PLAN 002
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Figure 3 : Proposed Site Plan

surface water management

An additional stormwater dam may be required in the future towards the southern extent of the site to assist in stormwater management as the landfill footprint increases.

□ environmental impact assessment – expanded footprint**flora & fauna**

The proposed expansion area extends into Tasmanian Blue Gum plantation. The landfill has been specifically located to avoid areas of remnant bushland on the site. Clearing will be required within plantation forest only. SUEZ will also implement a range of measures to minimise possible impacts on areas of remnant vegetation, including the adjacent State Forest.

surface water and stormwater

A site specific Surface Water, Drainage and Sediment Control Plan will be designed and implemented which will divert undisturbed (uncontaminated) surface run-off in a manner to prevent erosion and prevent stormwater from disturbed areas from flowing offsite or entering waterways. A biannual groundwater monitoring program will also be developed and implemented and reporting to the DWER annually.

SUEZ will also implement a range of measures to minimise possible deterioration or contamination of surface water or groundwater.

heritage

A search of the Aboriginal Heritage Inquiry System revealed that there are no registered sites or Other Heritage places.

air quality

EPA Draft Separation Distances between Industrial and Sensitive Land Uses recommends that a putrescible landfill site (Class II and III) maintain a separation distance of 1,000m to the nearest sensitive receptor. The nearest sensitive receptor is approximately 4.4 km west of the proposed facility, well beyond the separation distances for a putrescible landfill site.

Predicted residential standard odour impacts of 2.5 ou (odour units) were assessed and determined to have an average radius of approximately 2 km; still 2 km away from the nearest sensitive receptor and therefore unlikely to impact occupants.

SUEZ will implement a range of measures to further minimise the risk of odour impacts.

noise – construction & operation

The nearest sensitive receptor is approximately 4.4 km west of the proposed facility.

Noise levels were predicted at the nearest sensitive receptor to the landfill for both construction and operation and assessed against night time noise criteria. The predicted worst case construction and operational noise levels at the nearest sensitive receptor are 24 dBA and 22 dBA, respectively, comfortably below the most stringent, night time, criteria of 37 dBA.

SUEZ will implement a range of measures to minimise the risk of noise impacts.

dust

Fugitive dust emissions to air potentially adversely impact air quality and therefore the health of site workers and fauna as well as resulting in dust deposition on remnant flora.

SUEZ will implement a range of measures to minimise the risk of dust impacts.

fire

A *Bushfire Hazard Level Assessment and Bushfire Management Plan* has been prepared which considers vegetation type and structure, climate, the topography of the site and adjoining lands and reviews the *Bushfire Management Plan* originally developed for the RRP.

The site currently has 2 x 160 kL water tanks with a fixed standpipe for rapid filling of appliances. Two portable units are also available on-site for rapid deployment. There is also a large stormwater dam for refilling the water trucks and/or fire-fighting tanks if needed. A 15 kL water truck, normally used for dust suppression, can be used as a water cart and has couplings compatible for connection to the local brigade's appliances.

The *Bushfire Management Plan* concludes that the fire threat to people and property is significantly reduced.

hazardous materials

SUEZ will store all chemicals and hazardous materials in appropriate containment areas and will implement a range of measures to minimise the risk of hazardous materials impacting the environment.

It is considered that the proposed *Expanded Footprint* will have minimal impact on the environment and amenity of the immediate area of the site.

□ social impact assessment – expanded footprint**consultation**

SUEZ has consulted with the Shire of Boddington, Department of Water and Environmental Regulation and the Bibbulmun Track Foundation.

SUEZ is also establishing a *Community Reference Group (CRG)* within the local community which is expected to comprise representatives of SUEZ, Council and the Community. The primary purpose of the CRG is to function as a reference body for SUEZ, their stakeholders and the community.

visual & landscape

The RRP and proposed *Expanded Footprint* are situated approximately 5km west of Albany Highway. The landform and vegetation between the *Footprint* and the Highway will fully screen the current landfill and *Expanded Footprint* from Albany Highway.

The *Bibbulmun Track* runs along the northern boundary of the site then heading in a general south-westerly direction beyond the site. *Boonering Hill / Natural Pavement* is located approximately 800 metres to the west and is a 20 minute uphill walk from the main Track.

A *Visual Impact Assessment* of the proposed *Expanded Footprint* was undertaken by Golder Associates confirms that as with the current landfill, the *Expanded Footprint* will be visible from *Boonering Hill / Natural Pavement*.

SUEZ met with the *Bibbulmun Track Foundation* on the 29th August, 2017 to discuss the proposed *Expanded Footprint*. The *Foundation* has advised that the existing landfill operation has not impacted the *Track* and no complaints have been received. SUEZ has committed to continue to work with the *Foundation* to minimise any future impacts.

tourism

The RRP and proposed *Expanded Footprint* will not impact tourism associated with movement on Albany Highway. SUEZ is instituting a regular quarterly programme of road side collection of fugitive litter from waste transport vehicles and is upgrading the cover on its fleet of waste trailers to minimise the risk of fugitive litter.

It is possible that the proposed Expanded Footprint may result in further consolidation of local tourist services such as food and entertainment resulting from the on-going flow-on effects of the local employment and spending generated by the RRP.

economic & community

The RRP has a total current on-site complement of 18 persons of whom six are from within the local region and it is anticipated that staff replacements over time will result in a higher local workforce. SUEZ's preference is to fill its workforce requirements locally, as far as practical, as there are significant advantages in doing so.

The proposed Expanded Footprint will secure current employment well into the future as well as foster further future additional opportunities during the construction and operational stages, both directly and in-directly through the flow-on effects of sourcing of labour, plant and materials locally.

The total construction cost of the Expanded Footprint is estimated at \$36 million with the construction cost of each Cell estimated in the order of \$4 million. It is expected that a portion of the construction budget could be sourced locally including earthmoving, construction plant hire, concreting, trades and materials. Cell lining materials and processes are highly specialised and will be sourced from outside the region.

Operationally, approximately \$75,000 in services and consumables is currently sourced locally.

SUEZ is also a supporter of the local community and since assuming operations at the RRP have supported the Lions Boddington Rodeo, Boddington Arts Council, Boddington Community Resource Centre and Boddington Skate Park with funding and sponsorship support totalling \$23,500. SUEZ has also committed to becoming a Gold Sponsor of the Bibbulmun Track.

traffic

A Traffic Impact Assessment has been prepared and addresses both the existing RRP as well as the proposed Expanded Footprint at the current disposal rate of 350,000tpa.

The Traffic Impact Assessment concluded that the predicted traffic generation from the site will not adversely impact the operation of the existing road network and particularly Albany Highway.

SUEZ will also implement a range of measures to minimise disruptions and amenity impacts from haulage traffic to and from the RRP.

□ conclusion

The need for the Expanded Footprint is driven by the growing need for landfill airspace to not only continue to be met in a sustainable manner but in the process thereof reduce the pressure for the development of new "greenfield" landfill sites.

The proposed Expanded Footprint is consistent with the State Planning Strategy and the Shire of Boddington Local Planning Strategies and Local Planning Scheme.

The proposed Expanded Footprint is located wholly within an existing Blue Gum plantation and will have minimal impact on flora and fauna within the region. The landfill is well removed from any sensitive premises and the design and range of environmental management measures to be implemented by SUEZ will ensure minimal impact on the environment.

The RRP and proposed Expanded Footprint will not impact tourism nor impact most walkers on the Bibbulmun Track except from Boonering Hill / Natural Pavement which is a 20 minute uphill walk from the main Track. The Bibbulmun Track Foundation has advised that the exiting landfill operations have not impacted the Track and SUEZ has committed to continue to work with the Foundation to minimise any future impacts.

The Traffic Impact Assessment confirms that the predicted traffic generation from the site will not adversely impact the operation of the existing road network and particularly Albany Highway.

The RRP currently employs of 18 persons and it is SUEZ's preference to fill its workforce requirements locally, as far as practical, as there are significant advantages in doing so.

The proposed Expanded Footprint will secure current employment well into the future as well as foster further future additional opportunities within the region during the construction and operational stages, both directly and in-directly through the flow-on effects of sourcing of labour, plant and materials locally.

While some of the flow-on effects of the Expanded Footprint will benefit other regions, there still remains the potential for the direct and flow-on effects of the proposed Expanded Footprint to further consolidate the local and regional economy well into the future.

Approval of the Expanded Footprint for the North Bannister Resource Recovery Park will enable SUEZ to continue to meet the growing need for landfill airspace in a sustainable manner and further the development and diversification of current and future businesses that will strengthen and broaden the economic base of the local region.