Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Eastern Metropolitan Regional Council

Licence: L8889/2015/1

Registered office: 22 Great Eastern Highway
BELMONT WA 6104

Premises address: Red Hill Waste Management Facility
Lot 1 on Diagram 15239, Lot 2 on Diagram 68630 and Lot 11 on Diagram 69105 Toodyay Road Red Hill and Part of Lot 12 on Plan 26468 Toodyay Road Gidgegannup

Issue date: Thursday, 19 May 2015

Commencement date: Tuesday, 19 May 2015

Expiry date: Thursday, 18 May 2017

Date of Amendment: Thursday, 17 March 2016

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (the DER), has decided to issue a works approval. The DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Works Approval and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Damian Thomas
Licensing Officer

Decision Document authorised by: Caron Goodbourn
Delegated Officer

Contents

1 Purpose of this Document

This decision document explains how the DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	12	50, 000 tonnes per annual period
	62	10,000 tonnes per annual period
	64	350,000 tonnes per annual period
	65	Not Applicable
	67A	50,000 tonnes per annual year
Application verified Application fee paid	Date: N/A Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	Not applicable	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes☐ No ☒	

Is the Premises within an Environmental Protection Policy (EPP) Area Yes☒ No☐ Lot 239 is located within the *Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992* area
Is the Premises subject to any EPP requirements? Yes☐ No☒

3 Executive summary of proposal and assessment

The licence amendment application has been submitted by Eastern Metropolitan Regional Council (EMRC) (Applicant) for the construction of a Greenwaste processing hardstand pad and thus relocation of existing Greenwaste processing operations at the Red Hill Waste Management Facility (RWMF). The RWMF is situated on Lot 1, Lot 2 and Lot 11 Toodyay Road Red Hill and Lot 12 Toodyay Road Gidgegannup Western Australia. The EMRC is currently licensed under Licence L8889/2015/1 to operate the RWMF and the construction of a Greenwaste processing hardstand pad requires a works approval under section 53 of the *Environmental Protection Act 1986* (the Act). This application is to give effect to section 53 of the Act via a licence amendment.

The RWMF has a total area of 352 hectares and receives around 250-350,000 tonnes of waste per annual period. The licence includes the operation of a landfill for the acceptance and burial of waste classified as Class II, III and IV waste, as specified in the Department of Environment and Conservation (DEC) guideline *Landfill Waste Classification and Waste Definitions 1996*, as amended from time to time. The facility generates 4MW of electricity from landfill gas and Greenwaste is accepted and processed on site.

The RWMF greenwaste processing facility (GF) includes open windrow composting and mulching of source separated greenwaste and is licensed under Category 67A to undertake compost manufacturing and soil blending. The GP area occupies 50,000 m^2 (5 hectares) at the premises. Approximately 10,000 m^3 of greenwaste is processed annually into mulch and soil conditioner and sold to various markets such as recent Gateway WA project. EMRC obtained Australian Standard Certification AS4454 for mulching and composting activities in October 2009 and maintains this certification.

Feedstock for the GF comes from the City of Bayswater which provides a fortnightly city-wide 240l MGB garden waste collection service. Contamination levels are around 10% household wastes and this limits marketability. Contaminants (plastic bags, glass and pot–plants etc) are removed from the feedstock and disposed to landfill. Material accepted in the greenwaste MGB includes grass clippings, leaves, small pruning's flowers, bedding plants, weeds and branches less than 30mm in diameter. This feedstock is high in nitrogen and has levels of sand which passes through to the final product. Clean greenwaste is received from member Council parks and garden activities, kerb-side collections and residents disposing at the Red Hill transfer station. All types of source separated greenwaste are accepted at the site, but greenwaste must be less than 1.5m long and have a maximum diameter of 300mm.

Processing greenwaste at the GF involves an open-windrow (aerobic) composting system. Aerobic compositing requires oxygen and moisture to transform organic matter into valuable product. Oxygen is added by turning the windrows with a front-end loader. A water cart is used to add water to the windrows. The oxygen and moisture generate heat which is necessary for killing unwanted organisms such as weed seeds, pathogens and diseases. Temperatures are regularly taken and recorded to ensure the appropriate heat levels are generated and maintained for suitable periods of time. Bayswater MGB greenwaste is weighed as it arrives on site and is placed directly into windrows. It is watered, aerated and screened to remove particles greater that 12mm to produce soil conditioner. This product is branded "Soil Compost'. Clean greenwaste is weighed as it arrives on site and it is stockpiled for six to eight weeks, shredded to a normal size of 50mm or smaller, placed into windrows, watered and aerated to produce fine mulch branded "Mulch Compost'.

Due to the proposed construction of a new landfill cell at the location of the current GF, an alternate location for the GF is now required. The new GF will be constructed and operated at an area to the south of Lot 12 as shown in Figure 1.

The maximum production and design capacity for the GF will be 50,000 tonnes.

Decision Document is based on an assessment of the Applicant's Form P4 application for DER Licence amendment dated 11 November 2015 and Red Hill Waste Management Facility Relocation of Greenwaste Processing Area Additional Information to Licence Amendment Application (L8889/2015/1) dated November 2015. The licence will be fully reviewed within the next 12 months (and subsequently amended into a new format) so for the purposes of this amendment the licence will only include conditions relevant to the application to construct and relocate the GF and will remain in its current licence format.

This Decision Document identifies the risks of the Application and the proposed controls for these risks. In Summary:

- The Works Approval will be granted subject to the controls and likely conditions for the Licence described in section 4 of this draft Decision Document; and
- The Applicant may operate the new GF processing area once they have complied with the licence condition that will require a Compliance certificate be submitted to the CEO prior to operation of the GF, advising that the works have complied with licence conditions.

Location and siting

The PTRF premises location current features are:

- Geology: RWMF lies to the east of the Darling Fault, on part of the Darling Scarp, where the land slopes generally towards the southwest. The geology of the region is typical for that of the Yilgarn Craton, being dominated by granitic basement rocks with occasional intrusive dolerite dykes, weathered basement and weathered duplex soils. The latter consist broadly of ferruginous and lateritic gravels or lateritic hardpans, underlain by white and cream clays (referred to generally as the pallid zone) and with saprolite grits (clayey gravels and clays) overlying saprolite (weathered basement) and fractured granite bedrock. The granite has been intruded by sub vertical, northeast /southwest trending dolerite dykes.
- Land use: The site is an existing landfill. The site is zoned as 'Resource' under the Town Planning Scheme, and 'Rural' under the Metropolitan Regional Scheme;
- Topography: The current topography varies between 250m AHD to 300m AHD, but has been extensively modified by excavations for the landfill.

The DER (2015) *Guidance Statement: Separation distances (Draft released for consultation)* identifies that separation distances for Category 12 Screening etc is 1,000m for noise and dust, Category, 62 Solid waste facilities for noise, dust and odour emissions is 200m, Category 64 Putrescible landfill and Category 65 Class IV secure landfill is 1,000m for gaseous, noise, dust and odour and Category 67A outdoor uncovered above 35,000 tonnes per annum is case by case. The most representative prescribed premises category for this licence amendment application is Category 67A so the separation distance is on a case by case basis as the production and design capacity for this category is 50,000 tonnes per annual period (year).

Potential sensitive receptors in the vicinity of the SF premises are:

- Groundwater: The depth to the water table has been inferred to be approximately 4.5m bgl based on a long-section produced by EMRC. The regional groundwater table occurs within the fractured weathered bedrock, often semi-confined by pallid zone clays. The direction of groundwater flow is inferred towards the south-southwest in the vicinity of the GF, which is consistent with the remainder of the landfill facility. Perched water has also been identified in the ferruginuous zone above a relatively impermeable layer of kaolinitic clays. A groundwater study of the site has suggested that the perched aquifer has limited lateral extent. Logs from bores closest to the GF cell do not show a perched aquifer. EMRC have advised that the Stage 15 cell area which is adjacent to the GF has been excavated and no groundwater encountered.
- Surface water: The following surface water features are located within 1km radius of Stage 15:
  - Christmas Tree Creek flows in a westerly direction parallel to the southern boundary (approximately 400m south of the site boundary). The John Forrest National Park

exists in the middle of the catchment area of the creek. Christmas Tree Creek is a tributary of the Jane Brook 6km downstream and is a tributary to the Swan River.
    - Susannah Brook is an ephemeral stream that drains from the Darling Scarp in a westerly direction into the upper reaches of the Swan River. At its closes point it is located approximately 400m north of the premises boundary.
    - Strelley Brook is a small tributary of Jane Brook, located approximately 1km to the west of GF.
- Existing residences and landowners: A number of sensitive receptors have been identified in the vicinity of the RWMF, including but may not be limited to:
    - The nearest residence to the RWMF is approximately 400m north of the closest boundary of Lot 12 and is separated by Toodyay Road and bushland.
    - Residences in the surrounding area: The nearest residences to the GF are approximately 800m to the north and 800m to the south.
    - Christmas Tree Creek which is approximately 700m south of the GF.

Proposed works
The Applicant proposes the following works at the GF:
- The construction of the GF hardstand will be carried out to similar specifications as the current GF hardstand. The hardstand will be constructed from compacted clay and will have a minimum depth of 1m rising to a maximum depth of 5m due to natural topography. The hardstand will be graded with a 2% fall to enable adequate drainage to a dedicated leachate pond. A perimeter bund will be constructed around the entire GF processing area whilst the greenwaste stockpile areas will have separate internal bunding. Concept plans are shown in Figure 2, 3, 4 and 5.

Potential emissions
Potential emissions as a result of the works and operation of the works at the GF are:
- Discharges to Land: Potential emissions to land (leachate) may arise from the Operation of the GF;
- Dust: Potential emissions may arise from the Construction and Operation of the GF; and
- Noise: Potential emissions may arise from the construction and operation of the GF.

Further details of emissions and regulatory controls for the GF are detailed within section 4 of the Decision Table.

Occupation and planning approval
The Premises is currently occupied by the Applicant.
As the proposed works are considered public works, under section 6 of the Planning and Development Act 2005 works classified as public works do not require development approval. Therefore no planning approval is required.

Approval of works
This Decision Document and the Licence specifies the assessment of the Application and regulatory requirements for the GF works to proceed.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
General conditions	G9(g) – G9(l)	The Approved Premises production or design capacity on the front page of the Licence has been changed for categories 62 and 64 to reflect the production or design capacity approved through W5684. **Construction** The Applicant has applied for a licence amendment to allow construction and operation of the GF at the RWMF. Condition G9(g) has been added to the licence to allow construction of the GF according to the submitted application. Condition G9(h) has been added to the licence to ensure the GF is constructed according to the application. Condition G9(h) refers to specific design and construction criteria that must be meet during construction of the GF. The Applicant committed to constructing the GF at the southern end of Lot 12, construct a hardstand pad with a leachate pond of 80m length x 70m width x 3.5 depth, the GF will be bunded with the bund height and width of 500mm, the GF hardstand pad depth will be a minimum of 1m and maximum of 5m to suit topography and be graded with a 2% fall to direct drainage to the leachate pond. DER has imposed a maximum size for the GF of 50,000m^3 or 5 hectares as there was no prescriptive size dimensions provided in the application outside a nominal width of 360m and given the licence amendment application does not indicate permeability of the GF hardstand, DER has imposed a requirement that the permeability of the GF (including the leachate pond) be at least 10^{-9} m/s which means the GF pad and leachate pond is considered lined. Condition G9(i) outlines the specifications that the GF must be constructed to.	Application supporting documentation *Environmental Protection (Unauthorised Discharges) Regulations 2004* General provisions of the *Environmental Protection Act 1986* L8889/2015/1

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
	G9(m) G9(n) W4(a) – W4(d)	Condition G9(j) stipulates that the Licensee must notify the CEO if there are any departures from the specified construction requirements. Condition G9(k) requires the Licensee to submit a construction compliance report with specified information in condition G9(l) that must be signed by a person who is authorised to represent the Licensee. Once condition G9(k) and G9(l) have been complied with the Licensee can operate the GF as long as they meet compliance with Licence L8585/2011/1 **Operation** Condition G9(m) has been drafted to allow operation of the GF post construction and submission of the compliance certificate. Condition G9(n) has been added to the licence to ensure that a freeboard of 300mm is maintained at all times at the GF leachate pond to avoid overtopping. Conditions W4 (a) – W4 (d) have been removed from the licence in line with DER Redundant Conditions Guidance Statement.	
Fugitive emissions	N/A	**Construction** Emission description: *Emission:* Dust arising from construction of the GF and associated machinery movement. *Impact:* Reduced local air quality from airborne particulates is possible. The closest receptors are 800m from the premises. *Controls:* The site implements several dust suppression strategies including: • use of water trucks on unsealed roads and potentially dusty loads; • wheel wash; • vegetation screens; and • stabilisation of exposed areas.	Section 49 of the *Environmental Protection Act 1986* L8889/2015/1

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Risk assessment: *Consequence:* Insignificant *Likelihood:* Possible *Risk Rating:* Low Regulatory controls: It is not expected that dust emissions will be generated when the GF is constructed. It is considered that the provisions of Section 49 of the *Environmental Protection Act 1986* are sufficient to regulate dust emissions during construction. Residual risk: *Consequence:* Insignificant *Likelihood:* Possible *Risk Rating:* Low	
	A2(a) & A2(b)	**Operation** Emission description: *Emission:* Dust arising from shredding greenwaste, turning the greenwaste / mulch windrows and operation of the GF (Loader and vehicle movements etc). *Impact:* Reduced local air quality from airborne particulates is possible. The closest receptors are 800m from the premises. *Controls:* The site implements several dust suppression strategies including: • use of water trucks on unsealed roads and potentially dusty loads and wetting of greenwaste prior to shredding if required; • wheel wash; • vegetation screens; and • stabilisation of exposed areas. Risk assessment: *Consequence:* Insignificant	

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Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Likelihood: Possible *Risk Rating:* Low <u>Regulatory controls:</u> Previous licence condition A2 (a) and A2 (b) have been removed from the licence. It is considered that the provisions of Section 49 of the *Environmental Protection Act 1986* are sufficient to regulate dust emissions during operation. <u>Residual risk:</u> *Consequence:* Insignificant *Likelihood:* Possible *Risk Rating:* Low	
	G9(a) – G9(e) W1 G9(n)	<u>Emission description:</u> *Emission:* Leachate arising from decomposition of greenwaste and mulch at the GF. *Impact:* Contamination of surrounding land, groundwater and surface water drainage systems. Potential impacts on ecology of groundwater and surface water from the addition of nutrients. *Controls:* The GF strategies to mitigate impacts including: • hardstand pad permeability of at least 10^{-9} m/s which is clay lined; • hardstand pad minimum depth of 1m and maximum depth of 5m due to existing topography; • hardstand bunded which is 500mm high and wide; • hardstand is graded with 2% falls so all leachate is directed to a leachate pond within that hardstand pad; and • construction of a dedicated leachate pond at the GF.	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Risk assessment: *Consequence:* Insignificant *Likelihood:* Possible *Risk Rating:* Low Regulatory controls: Licence condition G9(a) to G9(e) are sufficient to regulate the greenwaste processing area in regards to possible leachate emissions at the GF. G9 (n) has been added to the licence to ensure a freeboard of 300mm is not exceeded in the GF leachate pond at all times. Residual risk: *Consequence:* Insignificant *Likelihood:* Possible *Risk Rating:* Low	
Odour	N/A N/A	**Construction** There will be no odour emissions during construction. **Operation** Emission description: *Emission:* Odour arising from compositing greenwaste at the GF. *Impact:* unreasonable odour that may interfere with the health, welfare, convenience, comfort or amenity of any person who is not on the premises. The closest receptors are 800m from the premises. *Controls:* There is no putrescible waste except greenwaste that is accepted for processing at the GF. Greenwaste does not generally produce odour. Risk assessment: *Consequence:* Insignificant	Section 49 of the *Environmental Protection Act 1986* L8889/2015/1

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Likelihood: Possible *Risk Rating:* Low Regulatory controls: There are no licence conditions regulating odour on the licence. It is considered that the provisions of Section 49 of the *Environmental Protection Act 1986* are sufficient to regulate odour emissions during operations. Residual risk: *Consequence:* Insignificant *Likelihood:* Possible *Risk Rating:* Low	
Noise	N/A	**Construction** Emission description: *Emission:* Noise arising from constructing the GF. *Impact:* Interference with the health, welfare, convenience, comfort or amenity of sensitive residential receptors, the closest resident is 800m from the premises. *Controls:* Noise is currently managed on site by: • operating only during the hours of 7am to 4pm on weekdays, 8am to 4pm on Saturdays and 10am to 4pm on Sundays; and • use of broadband 'clackers' on all site vehicles. Risk assessment: *Consequence:* Insignificant *Likelihood:* Likely *Risk Rating:* Moderate	*Environmental Protection (Noise) Regulations 1997*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Regulatory controls: It is considered that the provisions of *Environmental Protection (Noise) Regulations 1997* will be sufficient to regulate noise emissions during construction. Residual risk: *Consequence:* Insignificant *Likelihood:* Likely *Risk Rating:* Moderate **Operation** Emission description: *Emission:* Noise arising from operating the GF which includes the Loader, greenwaste Grinder and associated vehicle movements. *Impact:* Interference with the health, welfare, convenience, comfort or amenity of sensitive residential receptors, the closest residents are 800m north and south of the GF. *Controls:* Noise is currently managed on site by: • operating only during the hours of 7am to 4pm on weekdays, 8am to 4pm on Saturdays and 10am to 4pm on Sundays; • use of broadband 'clackers' on all site vehicles; and • Separation distance and buffer zones which are vegetated. Risk assessment: *Consequence:* Minor *Likelihood:* Unlikely *Risk Rating:* Moderate Regulatory controls: The Applicant has a statutory requirement to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*. It is considered that the provisions of *Environmental Protection (Noise) Regulations 1997* will be sufficient to regulate noise	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		emissions during operation. Residual risk: *Consequence:* Minor *Likelihood:* Unlikely *Risk Rating:* Moderate	
Licence duration	N/A	The Licence was originally granted for one year; until 18 May 2016. The expiry date has been extended by 12 months to enable adequate time to complete a licence review and issue the licence in the new format licence.	Department of Environment Regulation 2015, *Guidance statement: Licence duration* General provisions of the *Environmental Protection Act 1986*

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
15/02/2016	Proponent sent a copy of draft amendment	No comments and submitted signed waiver 14/03/2016	N/A

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

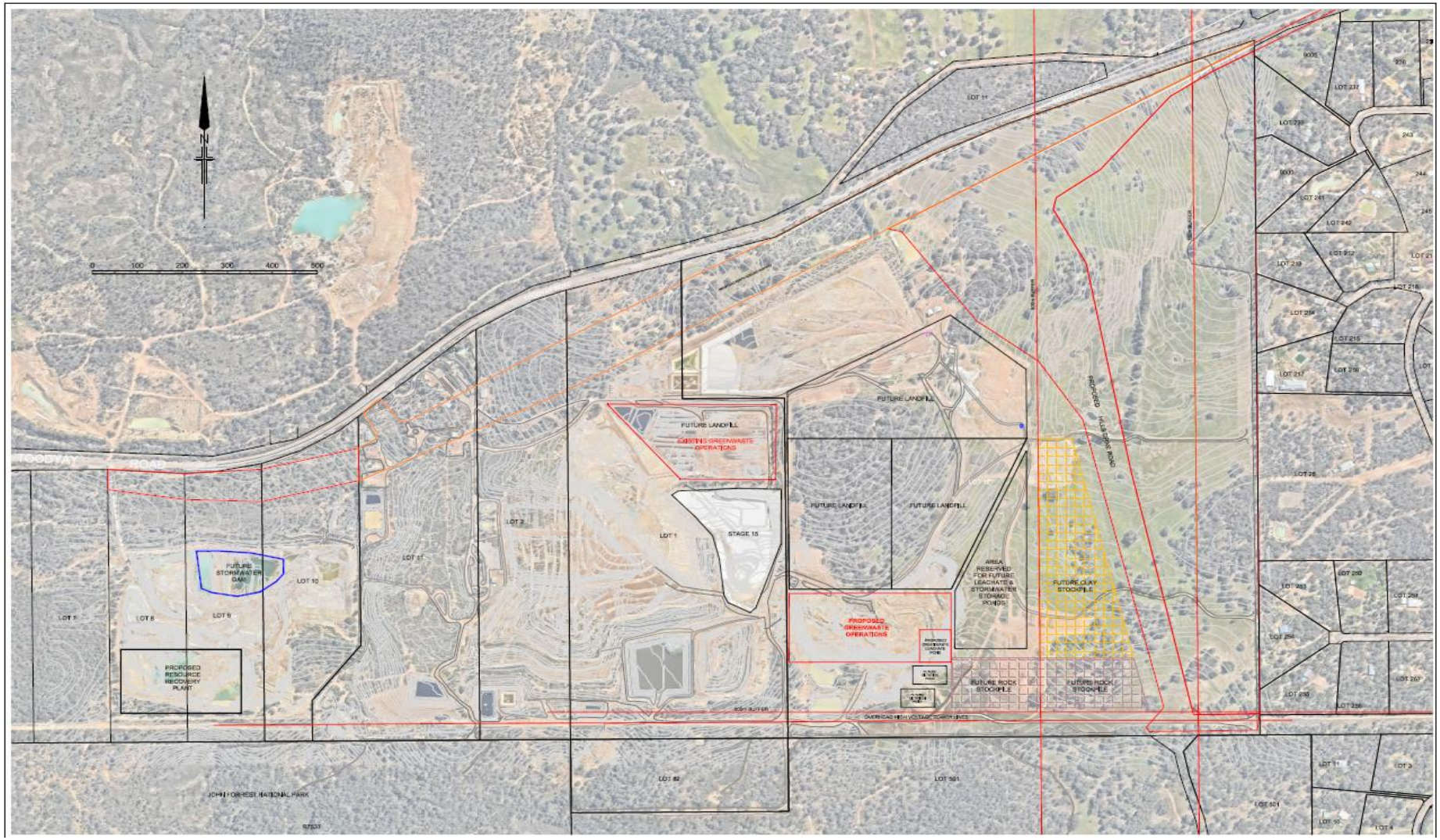

Figure 1 Overview and location of new Greenwaste facility

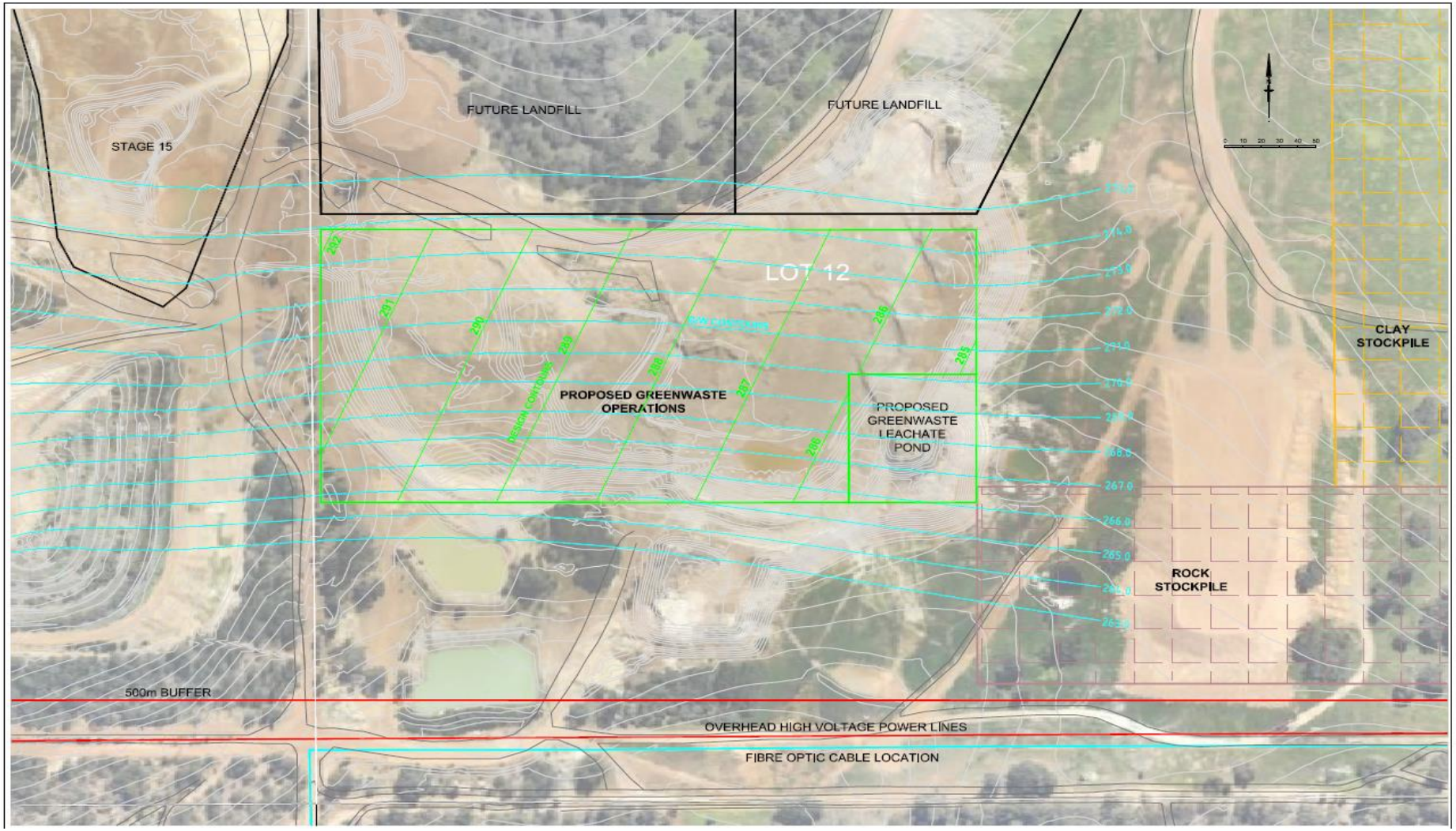

Figure 2 New Greenwaste Facility

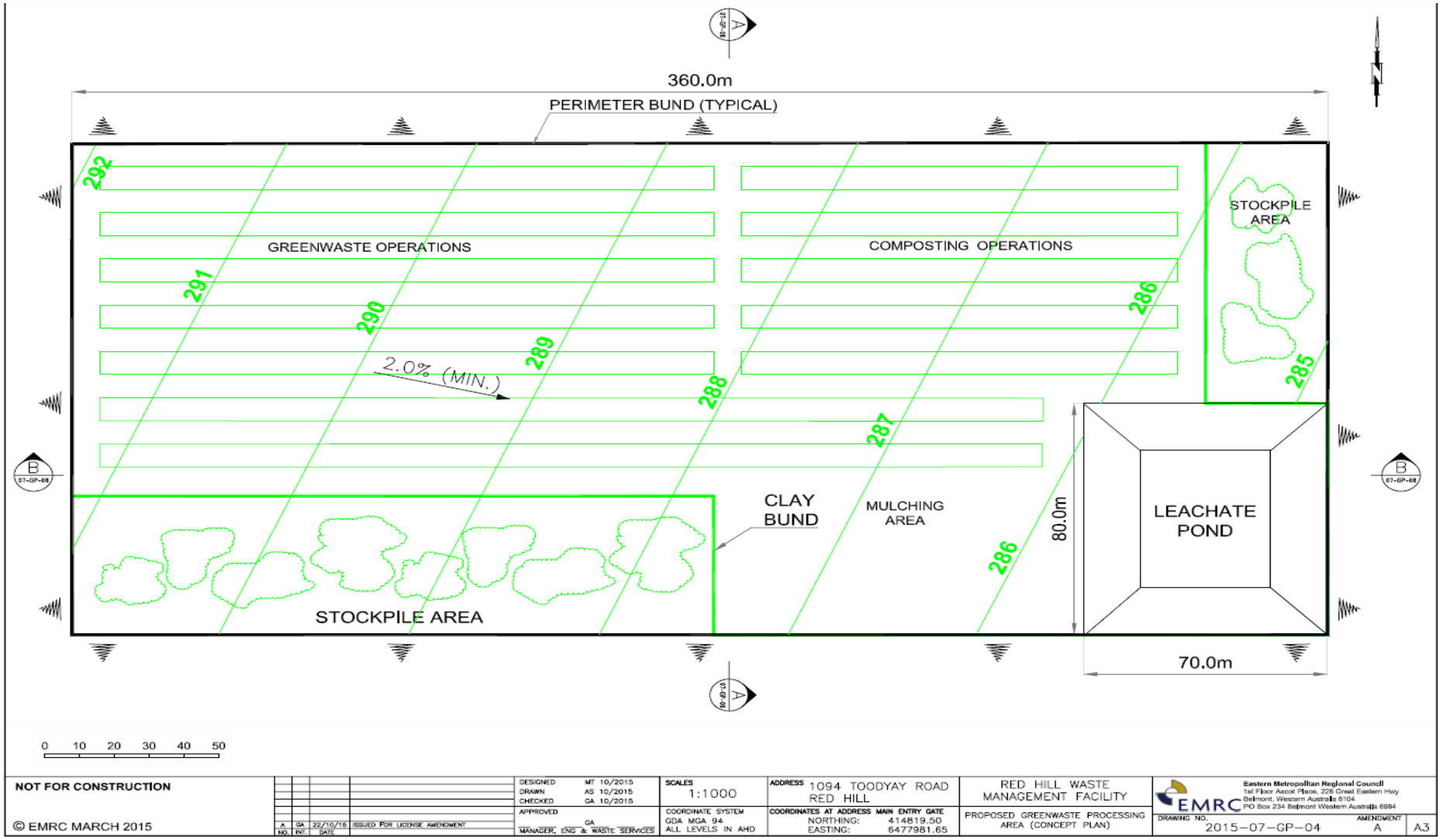

Figure 3 Greenwaste Facility layout

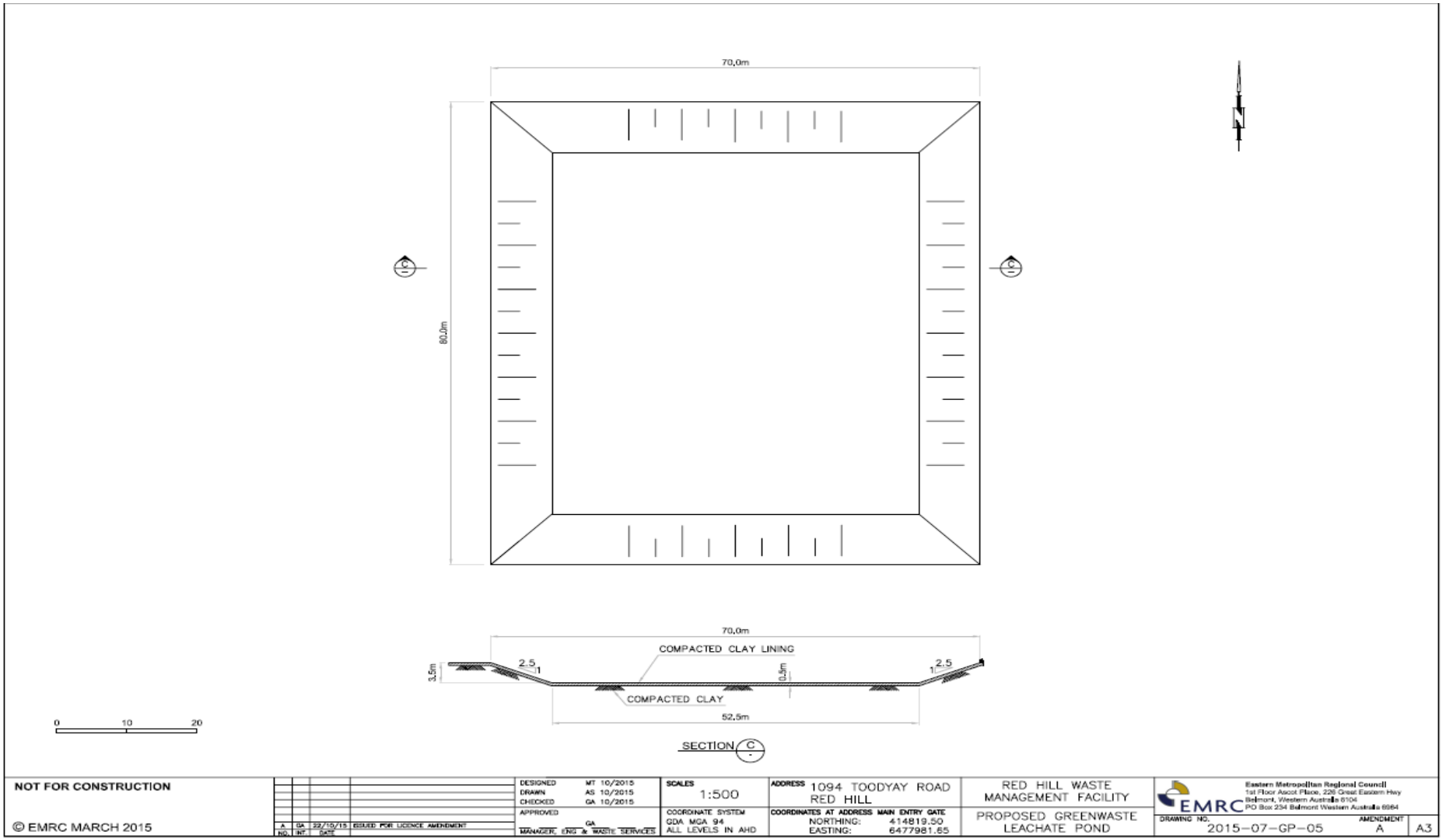

Figure 4 Greenwaste Leachate Pond

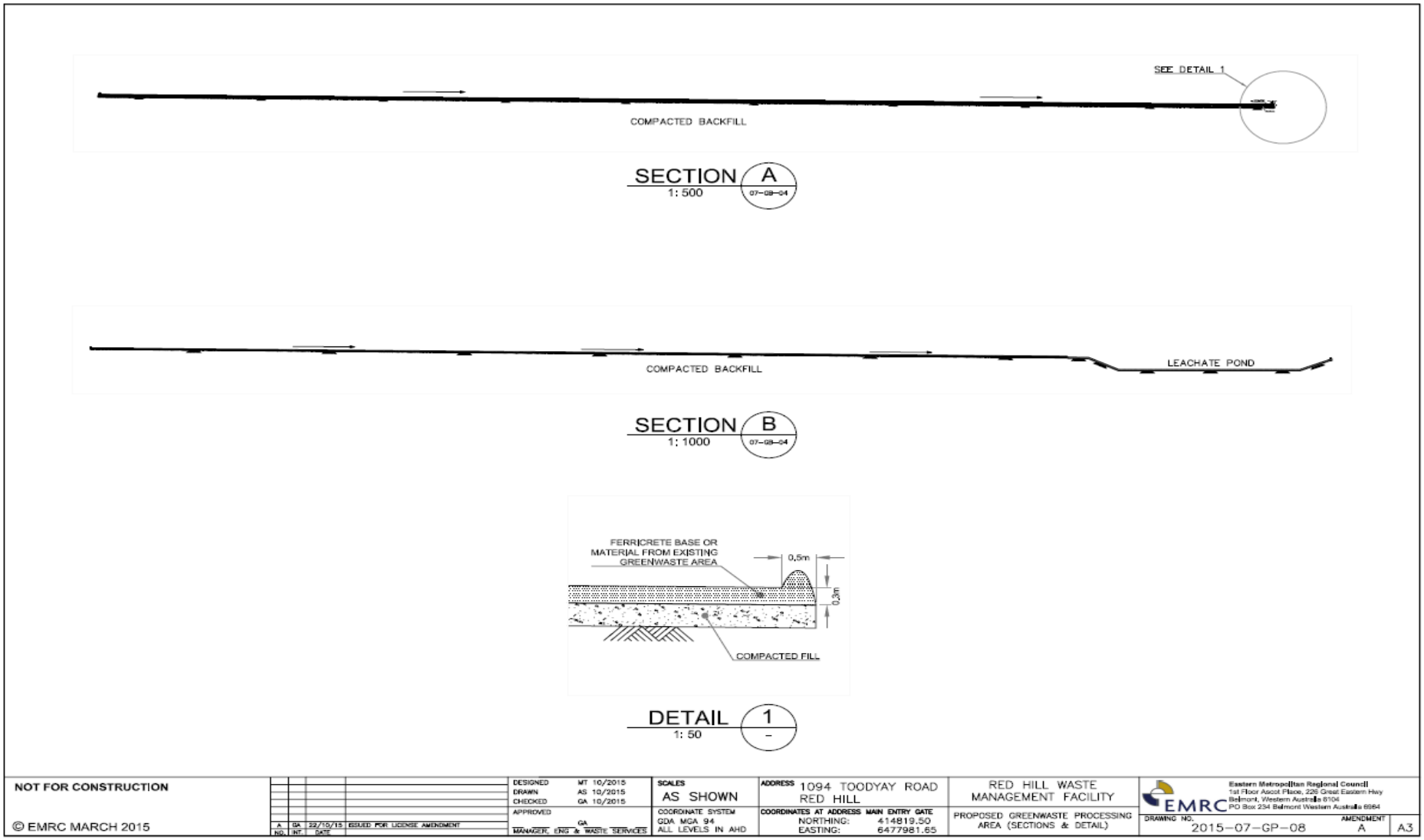

Figure 5 Greenwaste Facility cross-section