RAR -
ATTACHMENT 2

Allawuna Farm

Lots 4869, 5931, 9926 & 26934 Great Southern Highway
St Ronans, Shire of York

ALLAWUNA LANDFILL FACILITY

supplementary report

SITA Australia

February 2015

larry smith planning
urban and strategic planning & design

Allawuna Farm

Lots 4869, 5931, 9926 & 26934, Great Southern Highway,
Saint Ronans, Shire of York

ALLAWUNA FARM LANDFILL SUPPLEMENTARY REPORT

February 2015

Prepared for

for SITA Australia

Prepared by

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supplementary report – key outcomes

Introduction:

- Since lodging its Planning Application for the Allawuna Farm Landfill with the Shire of York in December 2013, SITA has progressed a number of matters relating to the proposed Allawuna Farm Landfill including local employment opportunities and fire management.
- SITA has also engaged Golder Associates to undertake further, more detailed site investigations and particularly into groundwater and sub-soil conditions.
- The additional investigations undertaken by Golder Associates have provided a more detailed understanding of sub-surface soil and groundwater conditions and have resulted in modifications to the Landfill design that will further minimise any potential risk to the local environment.
- Geotechnical investigations of the Landfill footprint and areas adjacent to the Landfill footprint confirm previous advice from the Department of Water that there is no paleochannel within the vicinity of the Landfill.

Modifications:

- The modifications to the Landfill:
  - Do not change the position of the Landfill within the Allawuna Farm;
  - Do not change the composite liner system designed to protect the surrounding environment from the potential impacts of leachate and Landfill gas migration;
  - Do not change the type or forecast annual tonnages of waste that will be accepted;
  - Do not change the facility operating hours;
  - Do not change the traffic movements;
  - Reduce the area of the Landfill footprint by approximately 31% from 52ha to 36ha;
  - Reduce the maximum height of waste deposited from 355m to 350.5m ;
  - Reduce the overall volume of waste placed by approximately 46% from approximately 11.1 million cubic metres of waste (10.1 million tonnes) to 5.1 million cubic metres (4.6 million tonnes);
  - As a consequence of the reduction in the volume of waste, reduce the nominal life of the Landfill from 37 years to approximately 20 years, based on forecast annual tonnages of between 150,000 and 250,000 tonnes of waste per annum;
  - Raise the floor of the Landfill to ensure a minimum clearance of at least 2m between the base of the Landfill and the maximum estimated winter groundwater level;
  - Require, as a consequence of the reduction in material excavated from the raised Landfill, sequential development of three borrow areas comprising a total of approximately 20ha commencing from approximately Year 10 onwards; and
  - Reduce the size and extent of the leachate ponds and stormwater dam required.
- The modified Landfill proposal does not differ in essence to the original application.

Impacts:

- The modified Landfill does not impact drinking water and is not within a Prescribed Drinking Water Supply Area. The Department of Water confirms that the Landfill is not within the Mundaring Weir Catchment Area.
- Modifications to the design and operation of the Landfill do not impact previous detailed odour modelling which demonstrated that all odour generated would be maintained well within the Farm boundary.

- Similarly, the modified Landfill does not impact the comprehensive noise assessment which found that predicted noise levels at the nearest residence were within the guideline limits for times of day during both the construction and operational phases of the Landfill.
- The visual, landscape and tourism values of the location continue not to be impacted by the modified Landfill as a consequence of its isolation and the topography and vegetation of the surrounding landscape which screens the site from all locations of social or tourist importance.

Fire Management Plan:

- A Fire management Plan has been prepared in consultation with the Department of Fire and Emergency Services (DFES).

Community Benefits:

- SITA has entered into a Heads of Agreement with Avon Waste, a locally based waste management contractor, for the provision of Landfill Management Services which will result in significant local employment opportunities, provide a significant impetus to the local and regional economy and will encourage the development and diversification of businesses that will strengthen and broaden the economic base of the York region. The opportunity also exists for one or more local contractors in the York region, including Avon Waste, to provide waste haulage functions to SITA.
- Firefighting equipment retained on-site will be available to assist with local fire management when not required on-site.

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1. introduction

Since lodging its Planning Application for the Allawuna Farm Landfill with the Shire of York in December 2015, SITA has progressed a number of matters relating to the proposed Allawuna Farm Landfill including:

- Entering into a Heads of Agreement with a local contractor for the provision of Landfill operation services;
- Prepared a Fire Management Plan; and
- Engaged Golder Associates to undertake further, more detailed site investigations and particularly into groundwater and sub-soil conditions.

The additional investigations undertaken by Golder Associates have provided a more detailed understanding of sub-surface soil and groundwater conditions and have resulted in modifications to the Landfill design that will further minimise any potential risk to the local environment.

As a consequence, on the 17 November, 2014 SITA withdrew its Works Approval Application with the Department of Environmental Regulation (DER) with the object of lodging a revised application for Works Approval in early April 2015. A copy of the Works Approval Application will be forwarded following lodgement.

Plans D001 to D013 accompanying this Supplementary Report describe the proposed modified Landfill.

The modified Landfill proposal does not differ in essence to the original application.

This Supplementary Report, which has been prepared by *Larry Smith Planning* – Urban and Strategic Planning & Design, *Golder Associates* – Environmental Engineers and *Bowman & Associates* – Environmental Engineers:

- Identifies additional relevant material and other matters progressed by SITA since lodgement of the Planning Application in December 2013;
- Addresses the outcomes of the further, more detailed site investigations; and
- Describes and discusses the resulting modifications to the design and operation of the Landfill.

For convenience, this Report follows the format and headings of the December 2013 Allawuna Farm Landfill Planning Report and includes references to the relevant December 2013 section and sub-headings in parentheses { }.

2. site environment

{Section 7}

This section comments on the outcomes of the further, more detailed site investigations, where that produces different information to that presented in the original Planning Application.

Additional site investigations have included:

- Sixty nine test pits excavated to approximately 4m depth or refusal within the area of the original Landfill footprint;
- Additional 25 Cone Penetrometer Tests within and outside of the area of the Landfill footprint;
- Additional 6 new Boreholes both up and down gradient of the proposed modified Landfill footprint;
- Electrical Resistivity Mapping and Magnetic Survey of the original Landfill footprint; and
- A range of geotechnical testing for the physical and geochemical properties of the soil.

2.1 surface water

{7.4}

The Landfill footprint intersects the upper reaches of a small seasonally dry creekline in the south-eastern portion of the footprint, in the location of the final Landfill cell. The creekline will be diverted around the final Landfill cell during the construction of that cell. A stormwater dam will be constructed in this dry creekline, together with a diversion structure to allow water to be diverted around the dam, should water not be required for construction or Landfill management purposes. This dam will collect water from the upstream catchment which is considered to be only clean water.

Water from subsurface drainage or interim capped areas will be contained in a retention pond, located outside of the creekline. Water collected in the retention pond will be tested and released if the water quality meets the guideline criteria. If the water quality does not meet the relevant criteria it will not be released, but be used within the Landfill cells for dust suppression or evaporated from the pond.

2.2 surface water and groundwater interaction

{7.5}

Groundwater is present throughout the site, predominantly unconfined (i.e. with a water table). Locally, groundwater may be perched on hillsides or hilltops, at locations where infiltrating rainfall reaches the less permeable, clayey material. Some of the clayey materials may have more permeable pathways through them due to tree root cavities and relic structures within the clay.

Some groundwater may be confined locally beneath the clayey parts of the lateritic regolith, particularly in the transition zone between weathered and fresh bedrock. In that zone, below the residual lateritic profile, weathered to fresh bedrock provides a fractured rock setting where groundwater storage and movement is within fractures and defects within the rock.

Recharge will occur where rain falling on sandier more permeable materials infiltrates down to the water table. Perched groundwater may be ephemeral, draining fully during summer months. Rain falling on clayey materials will run off more readily and infiltrate more slowly. In this way after rainfall, some

locations on the site may appear damp or boggy during winter months, until the transient shallow groundwater level attenuates through a combination of infiltration, lateral migration and evaporation.

Deeper groundwater may be derived from infiltration further up the catchment from the proposed Landfill site, with lateral movement down the drainage system.

The additional site investigations have confirmed groundwater levels over the Landfill site and the Landfill footprint has been raised to ensure a minimum clearance of at least 2m between the base of the Landfill and the maximum estimated winter groundwater level.

2.3 paleochannel

Additional geotechnical investigations of the Landfill footprint and areas adjacent to the Landfill footprint to the north, west and south confirm that on the balance of available information, and consistent with previous advice from the Department of Water, that there is no regionally continuous or significant paleochannel beneath or within the vicinity of the Landfill.

2.4 water catchments

{7.7}

The site is not within a Prescribed Drinking Water Supply Area and is not within the Mundaring Weir Catchment Area. The Department of Water confirms that the Mundaring Weir catchment divide is approximately 1,000m to the west of the Landfill footprint.

2.5 potentially sensitive agriculture

{7.11}

The Department of Agriculture and Food confirm that the “potential for contamination of the food supply chain from the Allawuna site is expected to insignificant” and that there is a higher risk of contamination from poorly managed on-farm refuse tips.

3. modified waste management facility

{Section 8}

This section discusses the modifications to the Landfill arising from the more detailed site investigations, where that produces different information to that presented in the original Planning Application.

3.1 overview

{8.1}

The overall layout of the modified Landfill remains generally the same as that for the original Landfill.

The modifications to the Landfill:

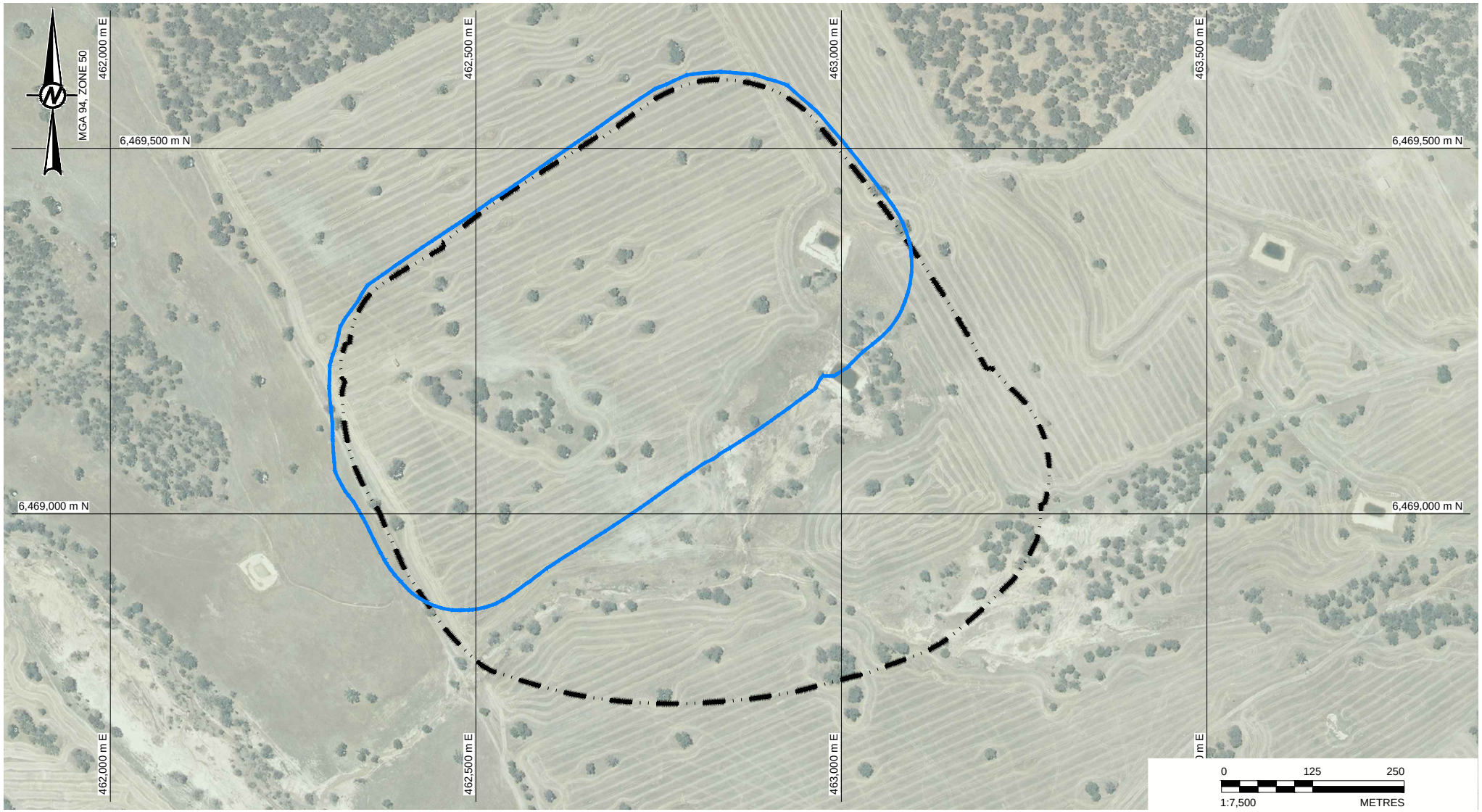
- Do not change the position of the Landfill within the Allawuna Farm [Figure 1 : Comparison Modified and Original Landfill Footprints];
- Do not change the composite liner system designed to protect the surrounding environment from the potential impacts of leachate and Landfill gas migration;
- Do not change the type or forecast annual tonnages of waste that will be accepted;
- Do not change the facility operating hours;
- Do not change the traffic movements;
- Reduce the area of the Landfill footprint by approximately 31% from 52ha to 36ha;
- Reduce the maximum height of waste deposited from 355m to 350.5m ;
- Reduce the overall volume of waste placed by approximately 46% from approximately 11.1 million cubic metres of waste (10.1 million tonnes) to 5.1 million cubic metres (4.6 million tonnes);
- As a consequence of the reduction in the volume of waste, reduce the nominal life of the Landfill from 37 years to approximately 20 years, based on forecast annual tonnages of between 150,000 and 250,000 tonnes of waste per annum;
- Raise the floor of the Landfill to ensure a minimum clearance of at least 2m between the base of the Landfill and the maximum estimated winter groundwater level;
- Require, as a consequence of the reduction in material excavated from the raised Landfill, sequential development of three borrow areas comprising a total of approximately 20ha and providing 856,000 cubic metres of material; and
- Reduce the size and extent of the leachate pond and stormwater dam required.

Given the above, it is considered that the modifications to the Landfill do not result in a proposal that is different in essence to the original application.

3.2 design & stability

{8.4.1}

The modified Landfill has been confined to the northern half of the original footprint to avoid the lower areas of the valley where the depth to the winter watertable is the shallowest and has been reduced from



LEGEND

- ORIGINAL LANDFILL FOOTPRINT (BOWMAN AND ASSOCIATES - DECEMBER 2013)
- MODIFIED LANDFILL FOOTPRINT (GOLDER ASSOCIATES - JANUARY 2015)

CLIENT
SITA AUSTRALIA

PROJECT
ALLAWUNA FARM LANDFILL

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

TITLE
COMPARISON BETWEEN MODIFIED AND ORIGINAL LANDFILL FOOTPRINTS

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F001

eleven cells to six cells having an approximate three to five year lifespan [Figure 2 : Modified Landfill Cell Layout].

Modelling of the design surfaces of the Landfill indicate that the design exceeds or meets the minimum Factors of Safety set for varying short term (operational) and long term (closure) conditions.

The overall height of the waste has been reduced from 355m AHD to 350.5m AHD [Figure 3 : Modified Landfill Final Form; Figures 4 & 5 : Modified Landfill Sections]

3.3 landfill liner

{8.4.2}

The design of the composite liner system remains unchanged. Where more permeable subgrade below the liner is encountered, it will be removed and replaced with a compacted engineered fill layer consisting of clayey material sourced from the site.

The synthetic liner system will be continuous over all cells and will be tied to the top of the external bund slope in an anchor trench.

3.4 leachate pond

{8.5.3}

The design approach to the leachate pond remains unchanged and the size is based on a water balance model for two consecutive wet years. The model indicates that a leachate pond capacity with a capacity of approximately 3,400 m^3 will be required. An area allowance has been made for expansion of the number of leachate ponds over the life of the site, should it be required, due to changes in waste tonnages or other unforeseen aspects.

3.5 groundwater monitoring system

{8.5.4}

Groundwater monitoring will be carried out through a number of monitoring bores upstream and downstream of the Landfill footprint, as per the original submission. Groundwater monitoring bores will be sampled and the water quality analysed every quarter.

In addition subsurface drainage will be constructed below the areas where fill material will be placed as well as in any visible seepage areas. Drainage water from the subsoil drains will be collected and pumped into a holding dam (retention dam), after which the water quality will be established and managed in accordance with the water management strategy for the Landfill.

3.6 surface water management

{8.6}

The surface water drainage is designed to prevent the interaction of stormwater and leachate. Clean runoff is diverted around the Landfill footprint to minimise the total volume of leachate that requires management.

A detention dam, similar to the previous design, will be constructed, slightly upstream of the previous location, to collect stormwater for use during construction as well as dust suppression during operation.

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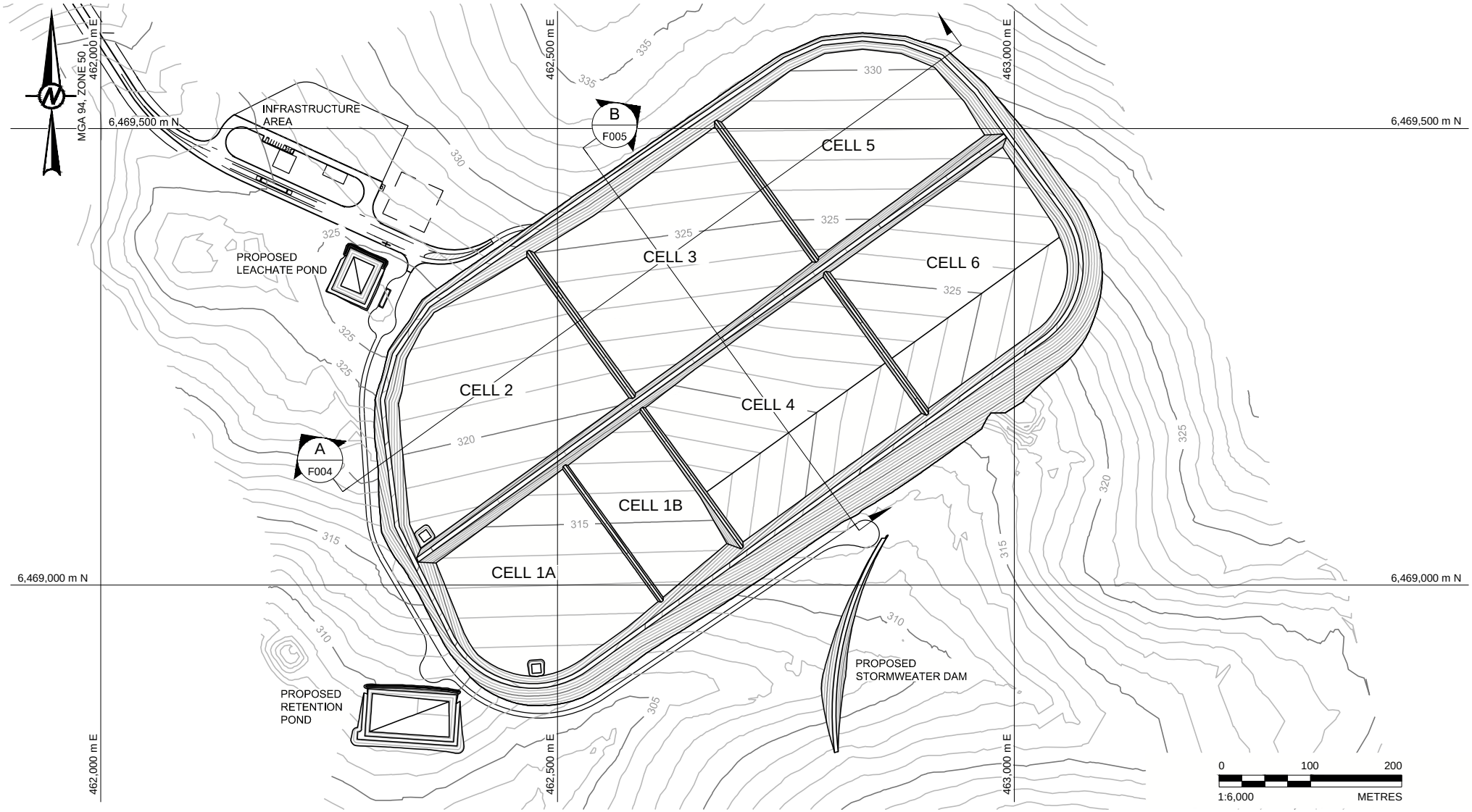

CLIENT
SITA AUSTRALIA

PROJECT
ALLAWUNA FARM LANDFILL

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

TITLE
MODIFIED LANDFILL CELL LAYOUT

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F002

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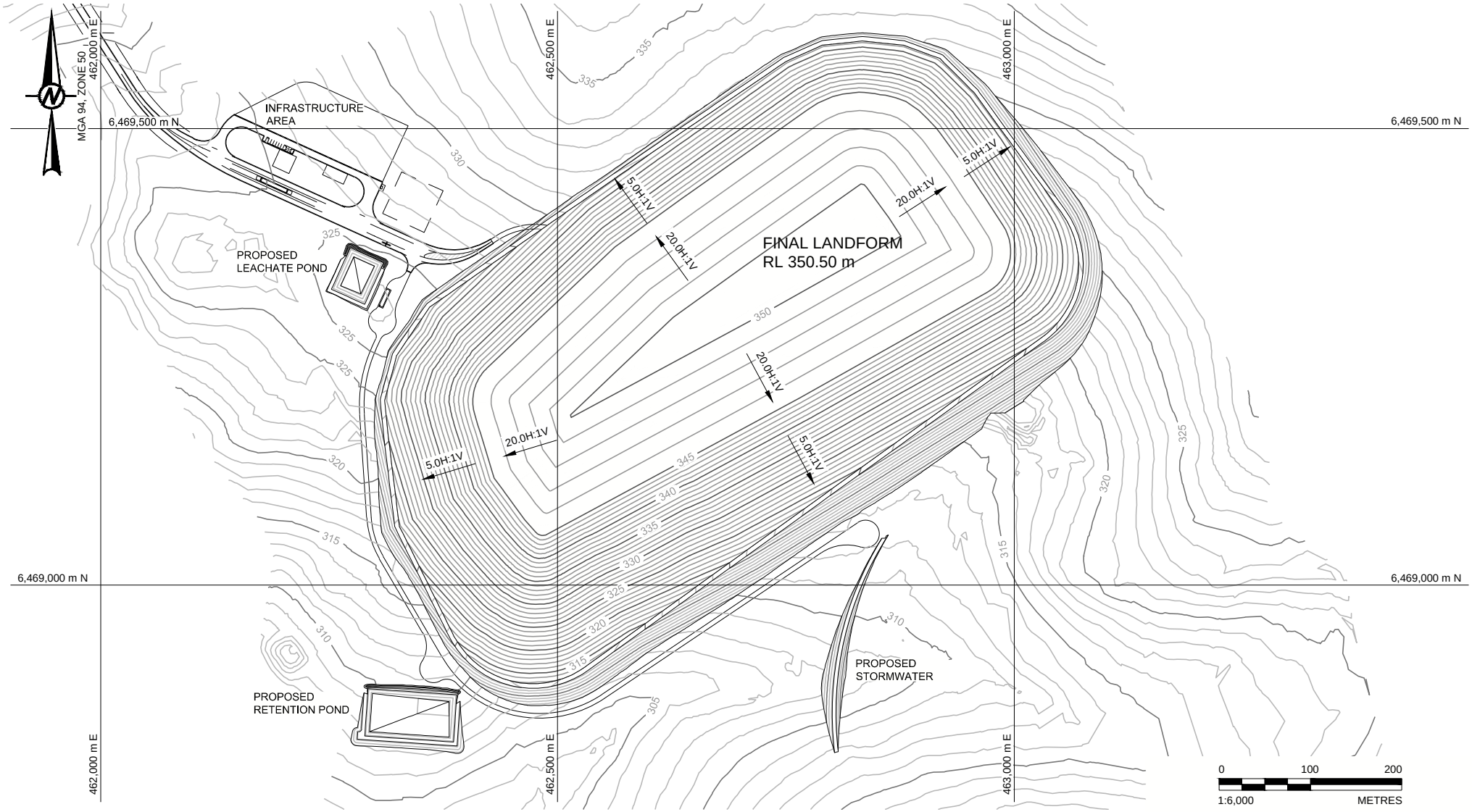

CLIENT
SITA AUSTRALIA

PROJECT
ALLAWUNA FARM LANDFILL

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

TITLE
MODIFIED LANDFILL
FINAL LANDFORM

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F003

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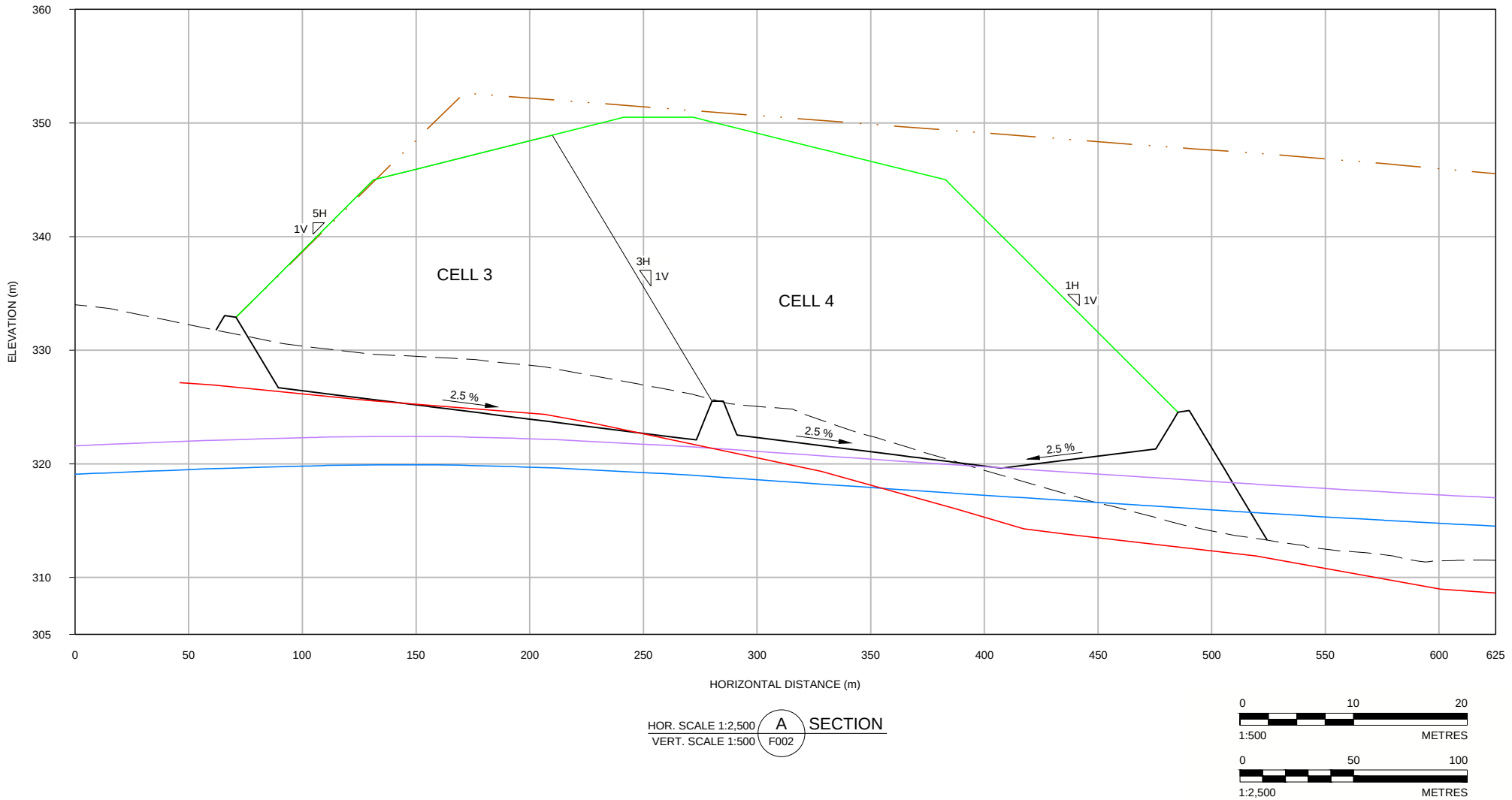


HOR. SCALE 1:2,500
VERT. SCALE 1:500

A F002 SECTION

0 10 20
1:500 METRES

0 50 100
1:2,500 METRES

LEGEND

- PREVIOUS ULTIMATE LANDFILL SURFACE
- ULTIMATE LANDFILL SURFACE
- PROPOSED DESIGN SURFACE (TOP OF GEOMEMBRANE LINER)
- EXISTING GROUND SURFACE
- ESTIMATED SOIL EXCAVATION SURFACE
- ESTIMATED GROUNDWATER SURFACE +2.5 m
- ESTIMATED GROUNDWATER SURFACE

CLIENT
SITA AUSTRALIA

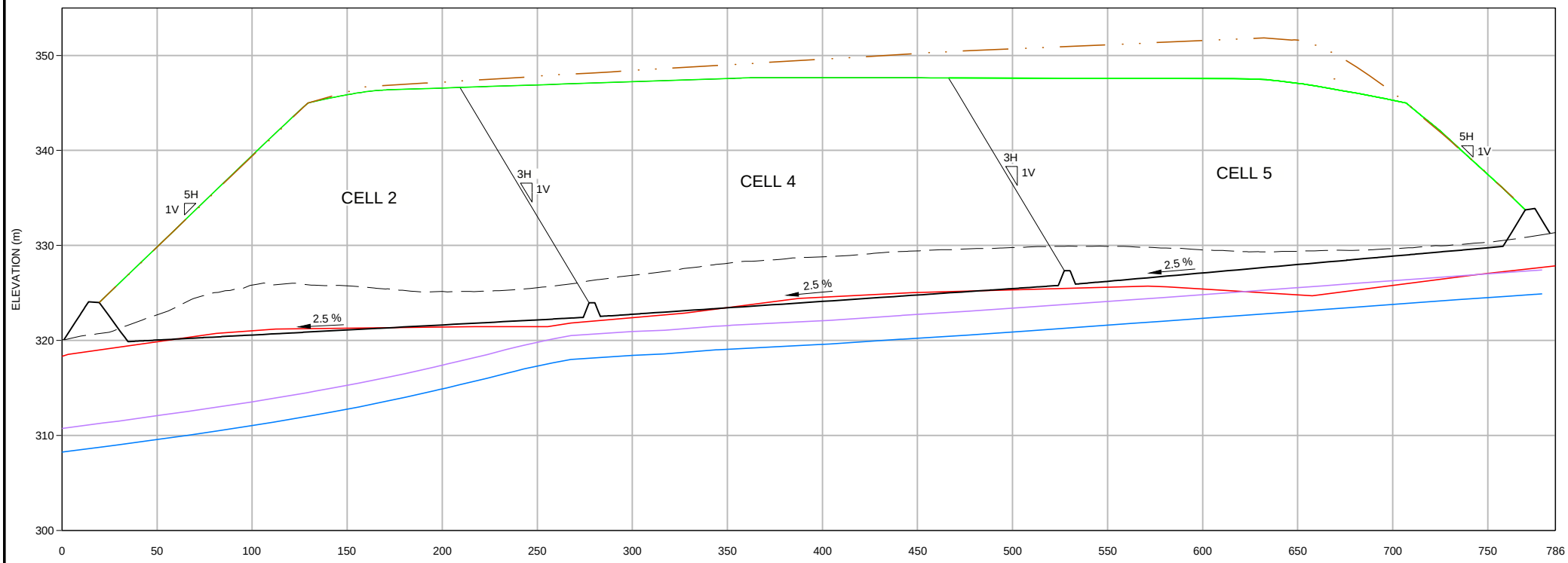
CONSULTANT
Golder Associates

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

PROJECT
ALLAWUNA FARM LANDFILL

TITLE
MODIFIED LANDFILL
SECTION NORTH / SOUTH

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F004



HOR. SCALE 1:3,000
VERT. SCALE 1:600

B / F002 SECTION

0 10 20
1:600 METRES

0 50 100
1:3,000 METRES

LEGEND

- PREVIOUS ULTIMATE LANDFILL SURFACE
- ULTIMATE LANDFILL SURFACE
- PROPOSED DESIGN SURFACE (TOP OF GEOMEMBRANE LINER)
- EXISTING GROUND SURFACE
- ESTIMATED SOIL EXCAVATION SURFACE
- ESTIMATED GROUNDWATER SURFACE +2.5 m
- ESTIMATED GROUNDWATER SURFACE

CLIENT
SITA AUSTRALIA

PROJECT
ALLAWUNA FARM LANDFILL

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

TITLE
MODIFIED LANDFILL SECTION EAST / WEST

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F005

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:ISO A4
25 mm
0

3.7 landfill gas

{8.7}

A landfill gas collection system will be used to extract and control landfill gases generated. Modelling (GasSim) of the modified Landfill indicates a peak of approximately 2,500m3 / hour of gas production.

During the initial years, landfill gas will be burnt to flare within a controlled facility. As volumes increase, electricity generation will be investigated.

3.8 borrow areas

Earthwork modelling based on the revised, higher Landfill floor level has identified an imbalance in material required for construction, daily cover and capping, necessitating the recovery of additional materials from elsewhere within Allawuna Farm. It is projected that the additional materials will be required from Year 10 onwards.

A total of 856,000 cubic metres of material is required and will be recovered from three borrow areas in close proximity of the Landfill and totalling 19.9 ha in area [Figure 6A : Materials Borrow Areas – Location].

The borrow areas are currently characterised as the crest of a hill or sloping paddocks within the Farm. The crest will be excavated / "flattened" to the surrounding contours, whereas the sloping paddocks will be reshaped to form shallow wide valleys, to recover the additional material [Figure 6B : Materials Borrow Area – Typical Section]. The maximum depth of excavation is in the order of approximately 5m, reducing to 0m over the length of the excavation.

The top soil from these areas will be stripped and stockpiled for re-spreading during rehabilitation.

The borrow areas will be developed and rehabilitated sequentially, as demand requires, and are expected to be suitable for cropping as well as grazing.

3.9 staging of construction

{8.10}

The modified Landfill will be constructed and rehabilitated progressively and will comprise a total of six cells with each cell having an expected life of three to five years.

It is proposed that Cells 1 and 2 be constructed in the south western portion of the Landfill footprint. Subsequent Cell development will occur towards the north east of the first two cells in the order shown [Figure 2 : Modified Landfill Cell Layout].

3.10 capping, landscaping and aftercare

{8.11}

The cap will meet the design requirements of Class II Landfill and will consist of the following from bottom to top:

- 300mm thick intermediate earthen cover immediately above the last layer of waste;
- Geocomposite Clay Liner (GCL);
- LLDPE Geomembrane liner;
- Geotextile layer, if required;

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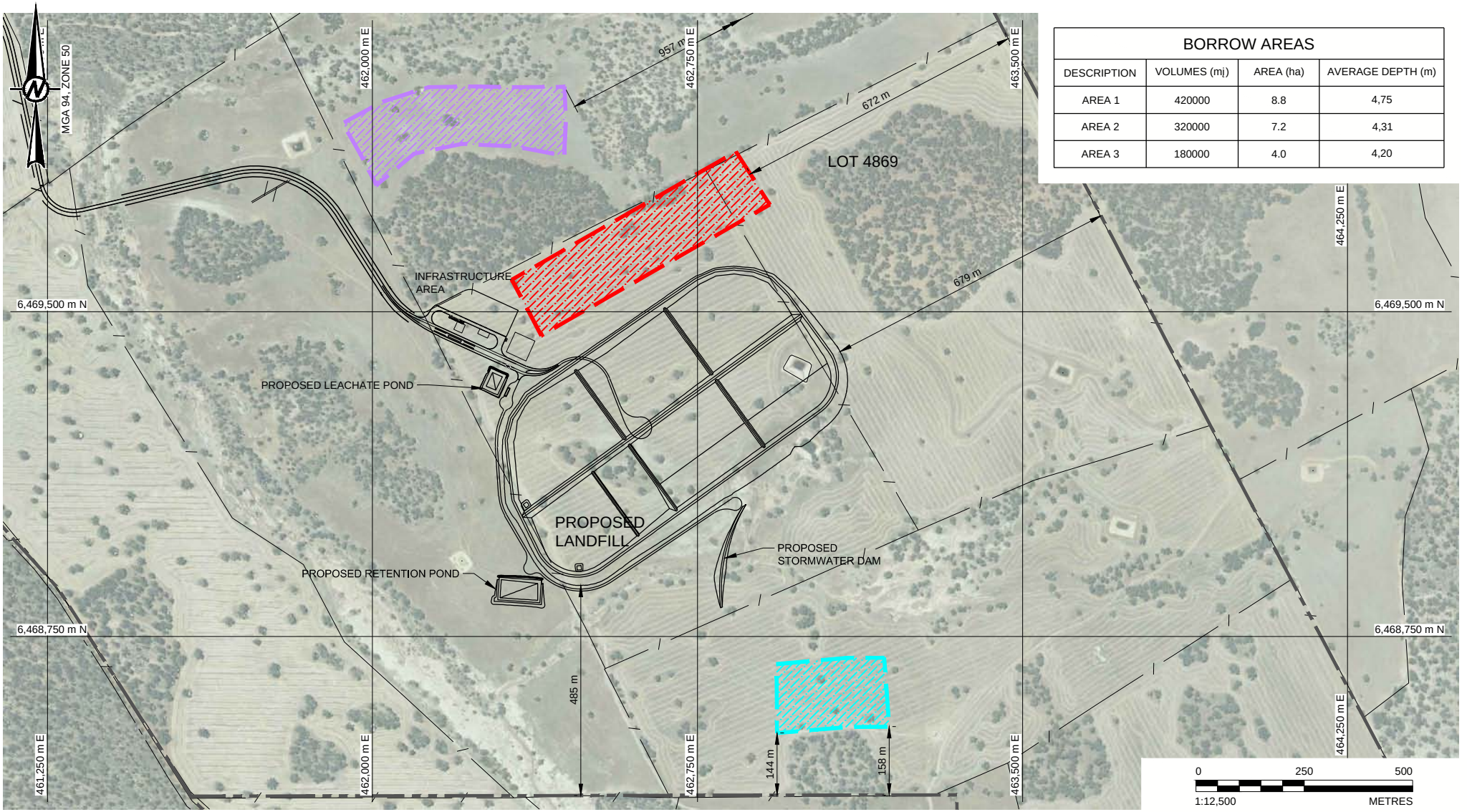

BORROW AREAS			
DESCRIPTION	VOLUMES (mj)	AREA (ha)	AVERAGE DEPTH (m)
AREA 1	420000	8.8	4,75
AREA 2	320000	7.2	4,31
AREA 3	180000	4.0	4,20

LEGEND:

- BORROW AREA 1
- BORROW AREA 2
- BORROW AREA 3
- CADASTRAL BOUNDARY
- EXISTING FENCE

CLIENT
SITA AUSTRALIA

PROJECT
ALLAWUNA FARM LANDFILL

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

TITLE
MATERIAL BORROW PITS

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F006A

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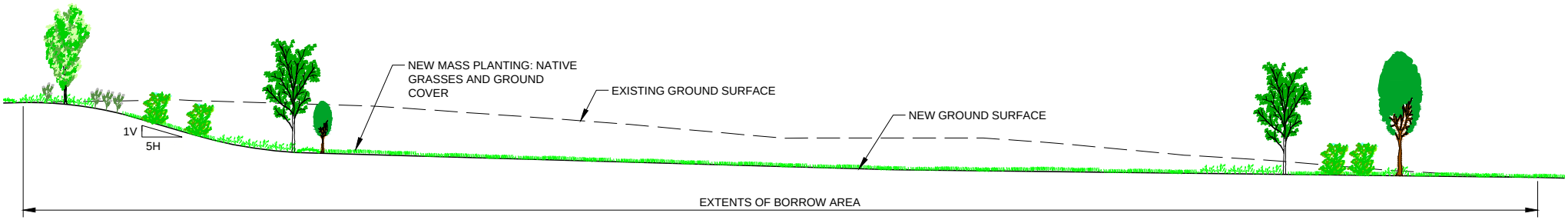

TYPICAL BORROW SECTION

SCALE 1:1,250 m

0 25 50

1:1,250 METRES

CLIENT
SITA AUSTRALIA

PROJECT
ALLAWUNA FARM LANDFILL

CONSULTANT

YYYY-MM-DD	2014-02-26
DESIGNED	E.KING
PREPARED	L.DuPREEZ
REVIEWED	L.DuPREEZ
APPROVED	L.SMITH

TITLE
MATERIAL BORROW PITS TYPICAL SECTION

PROJECT NO.	DOCUMENT NO.	REV.	FIGURE
147645033	PLANNING - FEB 2015	A	F006B

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

25 mm

0

- Geocomposite drainage layer; and
- 1000mm thick sub-soil, topsoil and mulch layer.

The final capped landform will be constructed at minimum gradient of 1:20 and a maximum gradient of 1:5 to facilitate drainage of stormwater while maintaining stability.

4. environmental impacts

{Section 9}

This section discusses the environmental impacts of the modified Landfill arising from the more detailed site investigations, where that produces information different to that presented in the original Planning Application.

4.1 groundwater & surface water quality

{9.8}

A minimum of at least 2m separation will be maintained between the liner and the maximum estimated winter groundwater table. If required subsurface drains will be installed below the Landfill to maintain a 2m separation from the waste. The water from the subsurface drains will be contained in a retention pond, where the water quality will be established and the appropriate actions taken as per the water management strategy for the site.

A regular bore sampling and testing program, coupled with a detailed response plan for evidence of contamination will be included in the water management strategy for the site.

4.2 fire

{9.9}

A Fire Management Plan has been prepared in consultation with the Department of Fire and Emergency Services (DFES). The Plan, which is discussed further at Section 5 optimises the prevention of fire in the first instance and addresses fire response for public safety and minimisation of related damage to the facility. The operational measures to be developed in the Fire Management Plan will minimise the risk of fire.

4.3 visual & landscape

{9.10}

The final waste levels of the modified Landfill have altered to the effect that the maximum height of waste has been reduced by 4.5m.

Plan D013 provides a cross-section through the highest point of the Landfill from a point adjacent to the North-West farm boundary adjoining the Mt Observation exit loop and demonstrates that the Landfill site continues to be screened fully from this location by the intervening landform and vegetation.

Given the above, the visual and landscape values of the location continue to not be impacted by the modified Landfill as a consequence of its isolation and the topography and vegetation of the surrounding landscape which screens the site from all locations of social or tourist importance.

4.4 impact on district agriculture

The objectives of the General Agriculture Zone of the Shire of York TPS 2 include:

"To ensure the continuation of broad-hectare agriculture as the principal land use in the district encouraging where appropriate the retention and expansion of agricultural activities."

Land capability data for Allawuna Farm and the broader Shire of York has been sourced from the Department of Food and Agriculture WA (DAFWA) as well as data from the Department's Northam Office in relation to the extent of cropping within the Shire of York in 2014.

4.4.1 land capability:

DAFWA have prepared broad scale Land Capability mapping for the primary agricultural areas of the South West of WA based primarily on the varying soil types within a district but also taking into account a range of other land qualities.

The mapping assesses the capability of each soil unit within the district against the prime agricultural activities of grazing, cropping (minimal tillage), perennial horticulture and annual horticulture and classifies the capability of each soil unit for each activity on a scale of Class 1 (Very High) to Class 5 (Very Low). Typically, soil units of Class 3 (Fair) or higher are considered as being suitable for that activity.

The primary agricultural activities within the Shire of York are grazing of stock animals (typically sheep for both wool and meat and cattle) or dry land cropping and primarily wheat and barley.

Land Capability mapping has been obtained from DAFWA for the Shire of York and specifically capability for dry land cropping as cropping is typically a higher value agricultural output than grazing of livestock; capability for cropping is heavily reliant on soil type and very little of the Shire is not suited to grazing; and

Therefore, removal of land suitable, albeit temporarily, for cropping may impact greater on the broader agricultural values of the Shire.

It is apparent from the Land Capability Mapping for Dry Land Cropping (minimal tillage) within the Shire of York that:

- Most of the cleared agricultural land within the Shire is predominantly of Fair (Class 3) capability for cropping;
- Only small areas of the Shire have greater than 20% of soils with a (Class 2 – High) for cropping; and
- No lands within the Shire show a Very High (Class 1) capability for cropping.

The soils comprising the Allawuna Farm and the Landfill footprint are identified as having predominantly Class 3 – Fair capability for cropping and therefore are of no higher agricultural value than much of the rest of the agricultural lands within the Shire.

The gross area of the Shire is approximately 212,000ha and includes significant areas of National Parks and nature reserves. Area data provided by DAFWA indicate for the Shire of York:

- Zero hectares of Class 1 (Very High Capability) cropping land;
- 14,438ha of Class 2 (High Capability) cropping land;
- 86,549ha of Class 3 (Fair Capability) cropping land; and
- 21,240ha of remnant vegetation on private land.

The total area of arable land impacted by the Landfill inclusive of the landfill footprint, access roads, leachate pond, stormwater dam, support infrastructure and the three borrow areas comprises approximately 81ha or 0.08% of all arable land within the Shire having a capability rating of Class 3 (Fair) or better for Dryland Cropping. This 81ha figure includes the fenced, secured area around the landfill and

support infrastructure, not just the landfill and support infrastructure footprint which is approximately 69ha inclusive of the three borrow pits.

4.4.2 land under crop:

Data from the DAFWA Northam Office shows crop planting within the Shire of York at the start of the 2014 season totaling 54,000ha; comprising 32,000ha of wheat, 9,000ha of barley and 13,000ha of other crops (Canola, Oats, Lupins and Field Peas) with an estimated gross yield of 164,000 tonnes.

It is evident from the DAFWA data that only half of the land having a Fair or better capability of being planted to crop within the Shire of York is actually utilised for cropping.

The lessee of Allawuna Farm planted 1,000ha of barley in the 2013 season with a gross yield of 3,000 tonnes for an average yield of 3 tonnes per ha.

At the same crop yield, the total Landfill footprint would yield in the order of 150 tonnes or 0.003% of the gross crop yield within the Shire and a similar percentage of the total land under crop in the Shire in 2014.

4.4.3 impact:

It is evident that the Allawuna Landfill will have little or no impact on the "*… the continuation of broad-hectare agriculture as the principal land use in the district..*" as the land temporarily lost to agricultural production represents only:

- 0.08%of arable land within the Shire having a capability rating of Class 3 (Fair) or better for cropping;
- 0.15% of the gross crop yield within the Shire based on estimates for crop yield within the Shire for the 2014 season; and
- On completion, the Landfill will be re-habilitated and may be used for agricultural use.

Furthermore, the Allawuna Landfill will have little or no impact on the "*..expansion of agricultural activities..*" as:

- Only half of the land having a Fair or better capability of being planted to crop within the Shire of York is actually utilised for cropping; and
- Clearing restrictions on remnant vegetation on private land – of which there is some 21,000ha within the Shire – is a far greater restraint on expansion of agricultural activities within the district as it is on Allawuna Farm itself.

It is also noted that both State and Regional Planning Strategies have consistently recognised the need for rural areas to remain flexible to accommodate a wide range of non-rural activities.

4.5 impact on shire of york administration resources

It is considered that the obligations of the Shire of York during the construction and operations phases of the Landfill will not be unusual or unduly onerous as the Landfill will be regulated primarily by the Department of Environment Regulation (DER) through the Works Approval and Environmental Licence.

It is expected that the Shire's operational oversight will be limited to:

- Oversight of planning approval conditions;
- Assessment and if acceptable, issue of building licences for any structures erected on site during

the construction phase; and

- Periodic inspection of the site to ensure it complies with the Local Government Act firebreak order.

There are currently three DER regulated facilities in the Shire:

- Shire of York Waste Treatment Facility – liquid waste facility – Lot 8 on Diagram 42561 Great Southern Highway – licensed since 1998;
- Shire of York Waste Transfer Station – Lot 606 on Plan 19716 (Crown Reserve 121), Spenders Brook Road – supervised by Avon Waste – licensed since 1997; and
- Water Corporation York Waste Water Treatment Plant – Lot 460 on Diagram 91128, Great Southern Highway – licensed since 2008.

5. fire management plan

{9.9}

A Fire Management Plan has been prepared in consultation with Officers of the Department of Fire and Emergency Services (DFES). The Shire of York was also approached for input to the Plan but referred the Proponent to DFES [Appendix 1].

The Fire Management Plan optimises the prevention of fire in the first instance and addresses fire response for public safety and minimisation of related damage to the facility. The Fire Management Plan identifies measures to be put in place to prevent a fire in the Landfill, site firefighting infrastructure, fire response procedures, firefighting equipment, storage of flammable materials and maintenance of fire breaks.

The primary firefighting equipment comprises:

- *Water Tanks / Reticulation:* One 150KL water tank and one 100KL water tank is proposed. The 150KL water tank will be dedicated for firefighting purposes only and the other for site water reticulation. The use of water soluable fire retardants for the fighting of Landfill (waste) fires is also proposed and the retardant will be stored in 20 L drums onsite for mixing prior to application. Water in the 30,000KL stormwater dam can also be used for refilling the water truck or firefighting tank after consultation with the Landfill Manager and determining if this additional water source is suitable.
- *Water Truck:* An all-terrain water truck will be available at all times for dust suppression and firefighting. The water truck will have a capacity to carry 14KL and can be coupled to the 150KL water tank through fittings compatible with the DFES and the local Fire Brigade fleet for easy filling from the tank. The DFES compatible fitting will also ensure that the dedicated firefighting tank is not used for any other purpose. The water truck will be fitted with a pump for pressurised release of water for fire retardation.
- *Fire Extinguishers:* Portable fire extinguishers will be provided in the office, workshop and also on the plant and equipment, including personnel vehicles.

Firefighting equipment retained on-site will be available to the assist with local fire management when not required on-site.

All Landfill operations staff will be required to undertake an appropriate nationally recognised fire and emergency response training course, appropriate for their role in an emergency. Refresher training will be undertaken biennially or as required. Fire response drills will be undertaken annually, and include response to fires in all zones of the property.

Any risk of fire or hazard identified within the site will be reported as soon as possible through 000.

Post fire, SITA will assist with de-briefs to relevant authorities. SITA will annually report on all events of fire to the DER and DFES as described in the site approvals or licencing conditions.

6. community benefits

6.1 economic

{10.3}

SITA remains strongly committed to ensuring as far as reasonably practical, that labour, plant and materials are sourced from the broader York region.

In this respect, SITA has since entered into a Heads of Agreement with Avon Waste, a locally based waste management contractor for the provision of Landfill management services including:

- Placement and compaction of waste in accordance with all relevant approvals;
- Provision, operation and maintenance of all plant and equipment, including supply of fuel;
- Employment and training of all personnel; and
- General site operations and maintenance.

The contract, when finalised, will be for an initial term of five years.

The opportunity also exists for one or more local contractors in the York region, including Avon Waste, to provide waste haulage functions to SITA.

The establishment of an Agreement with Avon Waste will result in significant local employment opportunities, provide a significant impetus to the local and regional economy and will encourage the development and diversification of businesses that will strengthen and broaden the economic base of the York region.

6.2 firefighting equipment

Firefighting equipment retained on-site will be available to the assist with local fire management when not required on-site.

6.3 shire of york municipal waste

Shire of York waste is currently disposed of at an unlined Landfill within the Shire of Northam. The Northam Landfill is situated in close proximity to the Avon River.

SITA has offered to accept Shire of York collected municipal, Class II waste at the Landfill for no disposal fee for the life of the Landfill providing estimated cost savings in excess of $100,000 per annum to the Shire in addition to providing a more environmentally acceptable disposal option.

To date the Shire has not indicated interest in relocating its waste disposal to Allawuna Farm if approved.

7. SITA commitments

{Section 12}

SITA remains committed to ensuring that the proposed Allawuna Farm Landfill will have minimal off-site impacts both during the construction and operation phases.

SITA is also committed to maximising the benefits of the Landfill to the broader York and regional community as far as reasonably practical.

In this respect, SITA Australia Pty Ltd makes the following commitments:

- Only Class I and Class II waste as described in the Landfill Waste Classification and Waste Definitions 1996 (as amended December 2009; DEC 2009) (or equivalent, as may be amended or replaced from time to time) being placed in the Landfill. Waste of any other Class received at the Landfill shall be held in a specific waste isolation area for removal to an appropriate site.
- No public access being permitted to the Landfill.
- SITA shall provide a copy of the Fire Management Plan and any management plans required by the DER to the Shire (if requested by the Shire) and post a copy on SITA's website.
- The balance of Allawuna Farm shall be used for agricultural purposes.
- Prior to commencing construction of the Landfill, SITA shall prepare a Landfill Construction Management Plan to ensure that the off-site impacts of construction of the Landfill and subsequent stages are minimised as far as reasonably practicable. The Plan shall address the primary aspects of the construction of the Landfill including:
  - staging of construction of the Landfill and support infrastructure;
  - internal and external road works;
  - cell staging; and
  - measures to be implemented to reduce dust, noise and other construction impacts, including compliance with all relevant regulatory requirements.
- SITA shall provide a copy of the Landfill Construction Management Plan to the Shire (if requested by the Shire) and post a copy on SITA's website.
- Prior to commencing operation of the Landfill, SITA shall prepare a Landfill Operational Management Plan to ensure that the off-site impacts of operation of the Landfill and subsequent stages are minimised as far as reasonably practicable. The Plan shall address the primary aspects of the operation of the Landfill including:
  - Landfill operating hours;
  - Receipt, vetting and recording of incoming waste;
  - Waste placement and cover procedures;
  - Leachate management;
  - Gas extraction and management;

- Odour, noise, litter and vermin management;
- Groundwater and surface monitoring and reporting;
- Fire Management;
- Complaints register procedures; and
- Cell capping and rehabilitation.

- SITA shall provide a copy of the Landfill Operational Management Plan to the Shire (if requested by the Shire) and post a copy on SITA's website.
- Prior to commencing operation of the Landfill, SITA shall prepare a Waste Haulage Vehicle Management Plan in consultation with Main Roads WA to ensure that the effects of increased heavy haulage vehicles on Great Southern Highway are minimised as far as reasonably practicable. The Plan will address the primary aspects of the haulage operation as they impact the Great Southern Highway and motorists on the Highway including:
  - Vehicle and trailer type, size and general specifications including colour schemes;
  - Haulage vehicle operating schedules and turnaround times;
  - Driver rest and fatigue management procedures; and
  - Vehicle litter clean down procedures and overall cleaning schedules.
- SITA shall provide a copy of the Waste Haulage Vehicle Management Plan to the Shire (if requested by the Shire) and post a copy on SITA's website.
- SITA shall upgrade the intersection of Great Southern Highway and the Allawuna Farm entry road at its own cost to provide a through lane for eastbound vehicles and a westbound acceleration lane for road trains exiting the site to Perth. The intersection shall be designed and constructed to MRWA requirements and approved by the MRWA prior to construction of the intersection commencing.
- Road train trailers used for the cartage of waste to the site shall be sealed and covered and show no markings indicating the source or nature of the materials contained therein (other than to comply with any legal requirements, for example over length).
- Prime movers used for the movement of the trailers may show markings of the haulage contractor provided that such markings do not indicate the source or nature of the materials being hauled (other than to comply with any legal requirements, for example over length).
- Prior to commencing construction of the Landfill, SITA shall prepare a Consultation and Reporting Strategy to ensure a high level of on-going consultation and interaction with the community. The Strategy shall provide for:
  - Establishment of a Community Reference Group (CRG) comprising representatives of SITA, the Council/Shire (if the Council/Shire requests) and the community. The CRG will be the principle point of contact and reporting to the community in relation to the construction of the Landfill and subsequent stages, the operation of the Landfill and tendering of periodic monitoring reports. The CRG shall meet as determined appropriate by the CRG; and
  - Provision of periodic DER reports to the CRG.

- SITA shall provide a copy of the Consultation and Reporting Strategy to the Shire (if requested by the Shire) and post a copy on SITA's website.
- SITA shall post copies of all reporting to the CRG on SITA's website and to the Shire for inclusion on its website (if requested by the Shire).
- Bitumen sealing and drainage of all primary Landfill access roads. Roadways providing access within the operational Landfill area and to the stormwater dam will not be sealed. Bituminised access roads will not be kerbed and shall be maintained in good condition for the life of the Landfill.
- Security lighting shall be limited to the main Landfill infrastructure area comprising parking and holding areas and administrative buildings and shall be environmental down lighting to minimise any light dispersal beyond the lit area.

appendix 1 :

fire management plan