

Date: 11 August 2020

Our ref: 20PER-16887

Parcel Property
Level 3, 14 Walters Dr,
Osborne Park,
WA, 6017

Bushfire Attack Level (BAL) Assessment Report for Brightwood Estate, Baldivis

Site Details

Address: Brightwood Estate, Baldivis

Stage 6 – Lots 214, 215, 216, 221, 222, 223, 245, 246, 247, 253, 254

Suburb: Baldivis **State:** Western Australia

Local Government Area: City of Rockingham

Description of building works: Residential Development

Report details

Report/Job number:	16887	Report version:	v0a
Assessment date:	05 August 2020	Report date:	11 August 2020
Author:	James Leonard	Review:	Daniel Panickar (BPAD Level 3 – 37802)





SITE ASSESSMENT AND SITE PLAN

The assessment of the 11 subject lots was undertaken on 5 August 2020 for the purpose of determining the Bushfire Attack Level (BAL) in accordance with *Australian Standard AS 3959-2018 Construction of Buildings in Bushfire Prone Areas* (SA 2018) Simplified Procedure (Method 1). An overview of the site is presented in Figure 1.

VEGETATION CLASSIFICATION

All vegetation within 100 m of the 11 subject lots was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation class with the potential to determine the BAL is identified below and presented in Figure 1.

It is currently assumed that areas of landscaped vegetation within the site and assessment area will be managed and maintained by Parcel Property (the developer) until replaced by residential dwellings and associated infrastructure or handed over to the City of Rockingham in the future.

Plot	1	Classification or Exclusion Clause	Class G grassland
		Photo Point 1 Classified vegetation within this plot is predominantly grassland with foliage cover from the over storey less than 10%. Vegetation is situated on flat land. This vegetation is located ≥ 50 m from the subject lot.	 <div>Compass rose showing directions S, SW, W, NW. Scale markings from 180 to 330. Coordinates: 256°W (T) 32°21'23.50"S, 115°49'35.55"E ±5m ▲ 14m. Timestamp: 04 Aug 2020, 13:54:35.</div>
Plot	1	Classification or Exclusion Clause	Class G grassland
		Photo Point 2 Classified vegetation within this plot is predominantly grassland with foliage cover from the over storey less than 10%. Vegetation is situated on flat land. This vegetation is located ≥ 50 m from the subject lot.	 <div>Compass rose showing directions N, NE, E, SE. Scale markings from 0 to 150. Coordinates: 80°E (T) 32°21'23.33"S, 115°49'31.26"E ±5m ▲ 21m. Timestamp: 04 Aug 2020, 13:56:39.</div>

Plot	1	Classification or Exclusion Clause	Excluded under clause 2.2.3.2 (e) and (f)
Photo Point 3 This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This area has been cleared for construction within Brightwood Estate.			
Plot	1	Classification or Exclusion Clause	Excluded under clause 2.2.3.2 (e) and (f)
Photo Point 4 This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018. This area has been cleared for construction within Brightwood Estate.			

RELEVANT FIRE DANGER INDEX

A blanket rating of FDI 80 is adopted for Western Australia, as outlined in Australian Standard (AS) 3959–2018 and endorsed by Australasian Fire and Emergency Service Authorities Council (AFAC).

POTENTIAL BUSHFIRE IMPACTS

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below, Table 1 and Figure 1.

Table 1: BAL Analysis AS 3959-2018

Plot	Vegetation Classification	Effective Slope	Separation distances required				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class G grassland	Upslope/ flat land	<6	6-<8	8-<12	12-<17	17-<50
2	Excluded under Clause 2.2.3.2 (e) & (f)	N/A	No separation distances required – BAL-LOW				

DETERMINED BUSHFIRE ATTACK LEVEL (BAL)

The determined Bushfire Attack Level (highest BAL) for the 11 subject lots has been determined in accordance with Clause 2.2.6 of AS 3959-2018 using the above analysis, Table 2 and Figure 2.

Table 2: BAL Assessment summary

BAL	Affected lots	Construction sections to be consulted in AS 3959-2018
BAL-FZ	Nil	N/A
BAL-40	Nil	N/A
BAL-29	Nil	N/A
BAL-19	Nil	N/A
BAL-12.5	Nil	N/A
BAL-LOW	Determined Bushfire Attack Level for: Stage 6 Lots 214, 215, 216, 221, 222, 223, 245, 246, 247, 253, 254	3 and 4

Figure 1: Vegetation classification

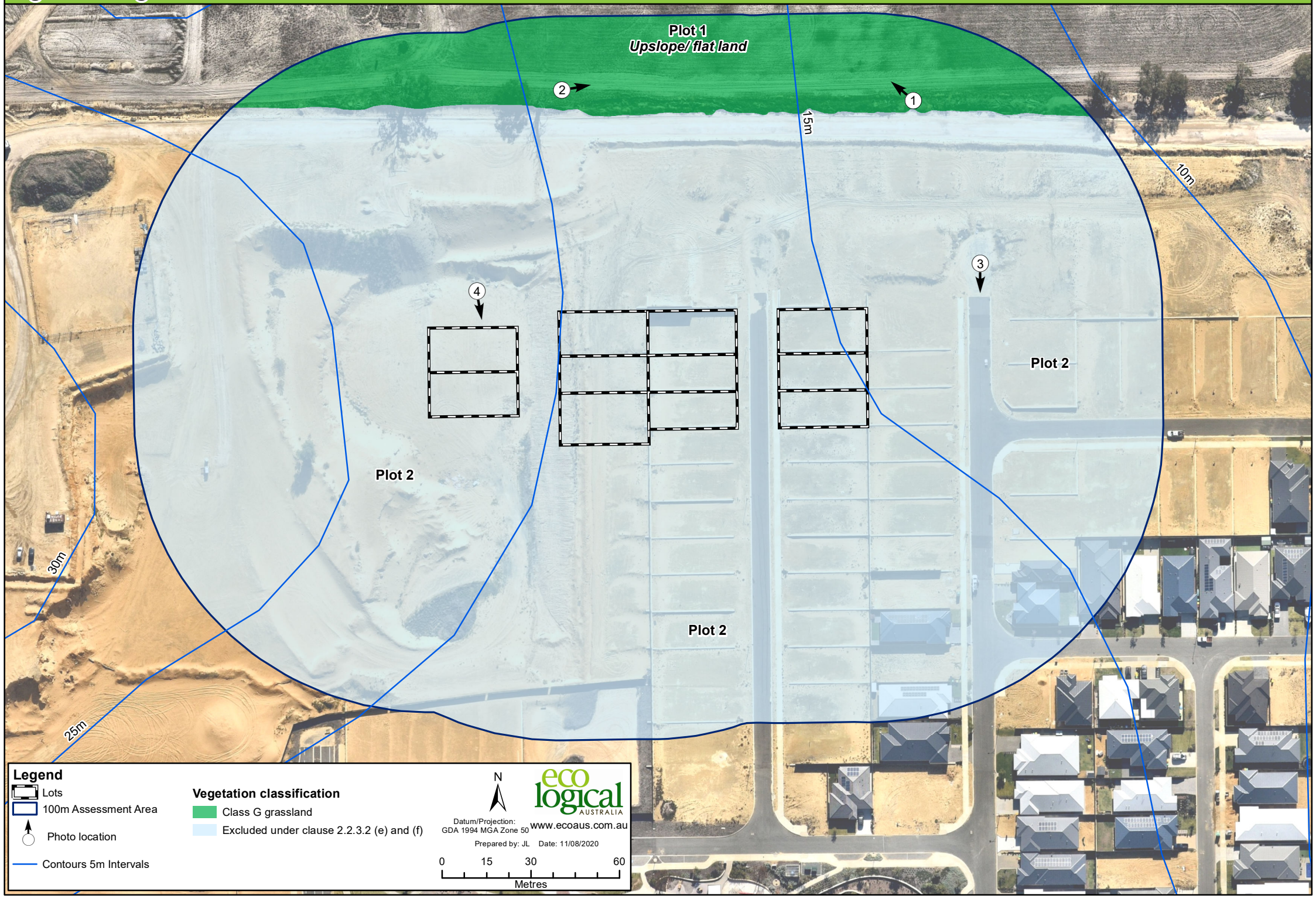
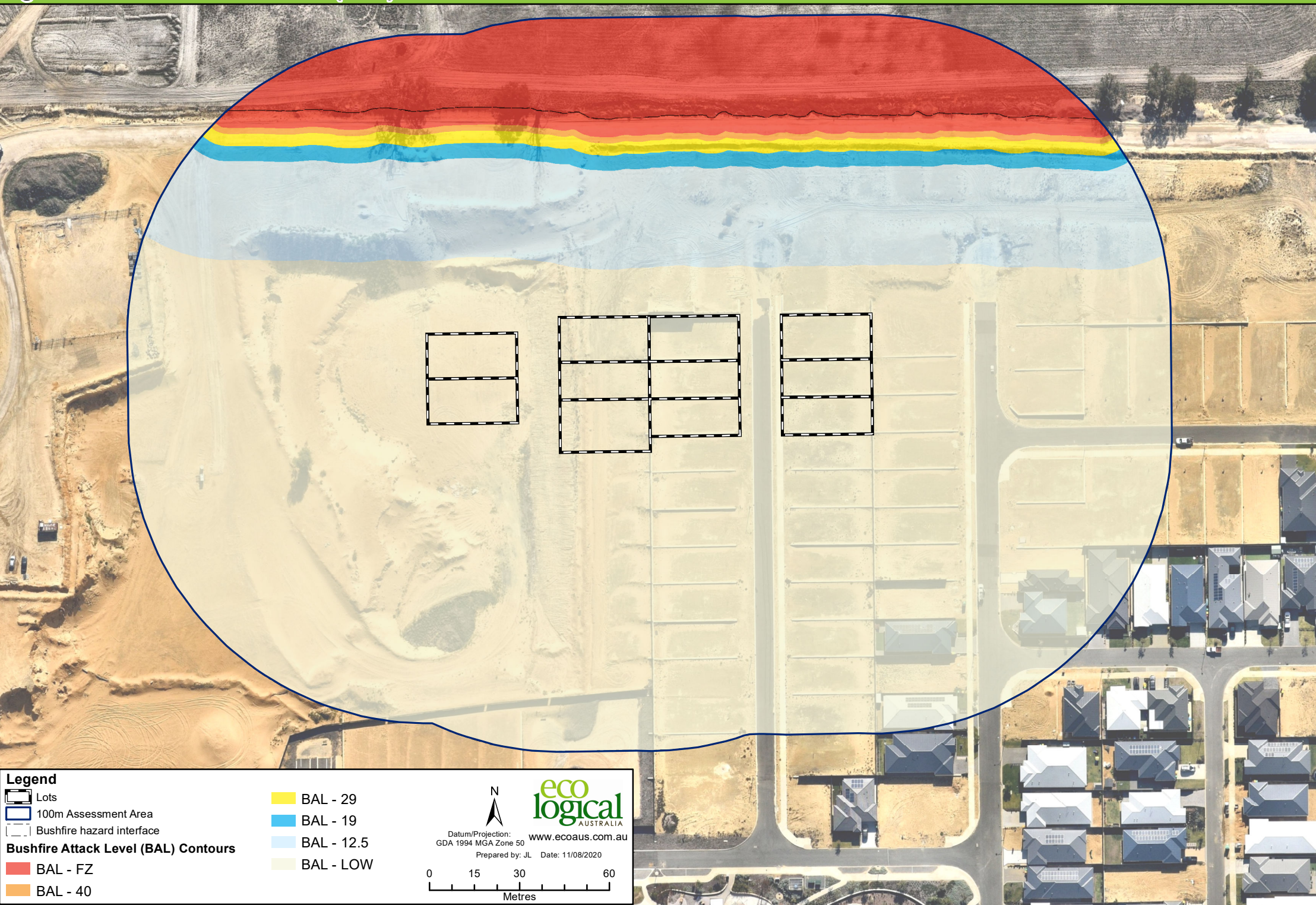


Figure 2: Bushfire Attack Level (BAL) Contours



Appendix A – Additional Information / Advisory Notes

This assessment was undertaken as per AS 3959-2018. It is important that the current version of AS 3959, is consulted for construction purposes.

This BAL rating is based on the information current at the date of this letter and is valid for 12 months from the date of this letter.

Bushfire Attack Level (BAL) as set out in the Australian Standard 3959 Construction of Buildings in Bushfire-Prone Areas (AS 3959), as referenced in the Building Code of Australia.

Bushfire Attack Level (BAL)	Classified vegetation within 100 m of the site and radiant heat flux exposure thresholds	Description of predicted bush fire attack and levels of exposure	Construction Section as per AS 3959
BAL-LOW		There is insufficient risk to warrant specific construction requirements.	4
BAL-12.5	≤12.5 kW/m ²	Ember attack	3 and 5
BAL-19	>12.5 kW/m ² ≤19 kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux.	3 and 6
BAL-29	>19 kW/m ² ≤29 kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux	3 and 7
BAL-40	>29 kW/m ² ≤40 kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux with the increased likelihood of exposure to flames.	3 and 8
BAL-FZ	>40 kW/m ²	Direct exposure to flames from fire front in addition to radiant heat flux and ember attack	3 and 9

Source: “AS 3959 - 2018 Construction of buildings in bushfire-prone areas” published by Standards Australia, Sydney

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 214, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	94 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

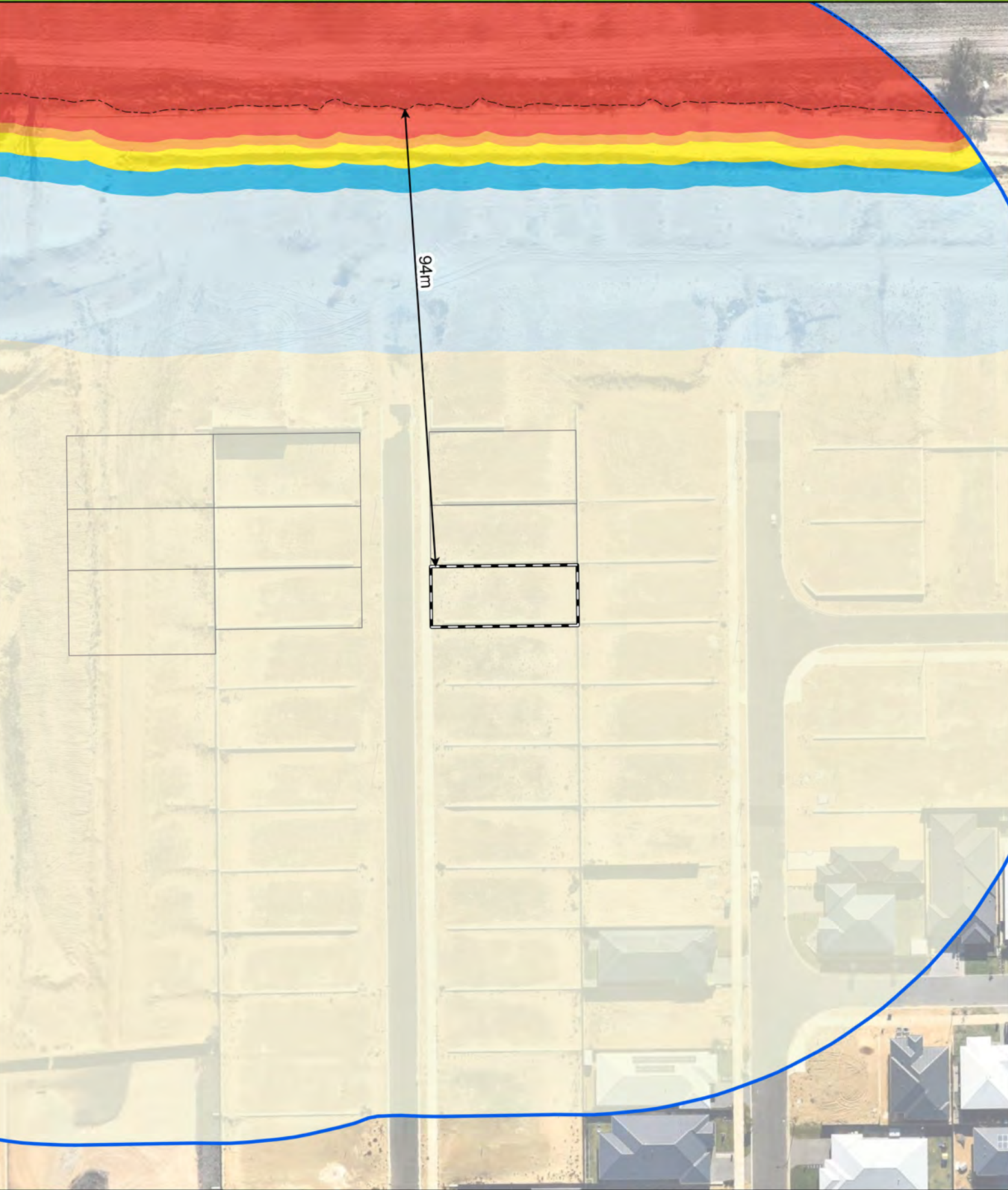
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Certificate Date: 11/08/2020



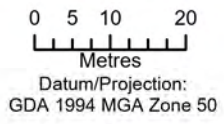
Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 214 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 215, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	81 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

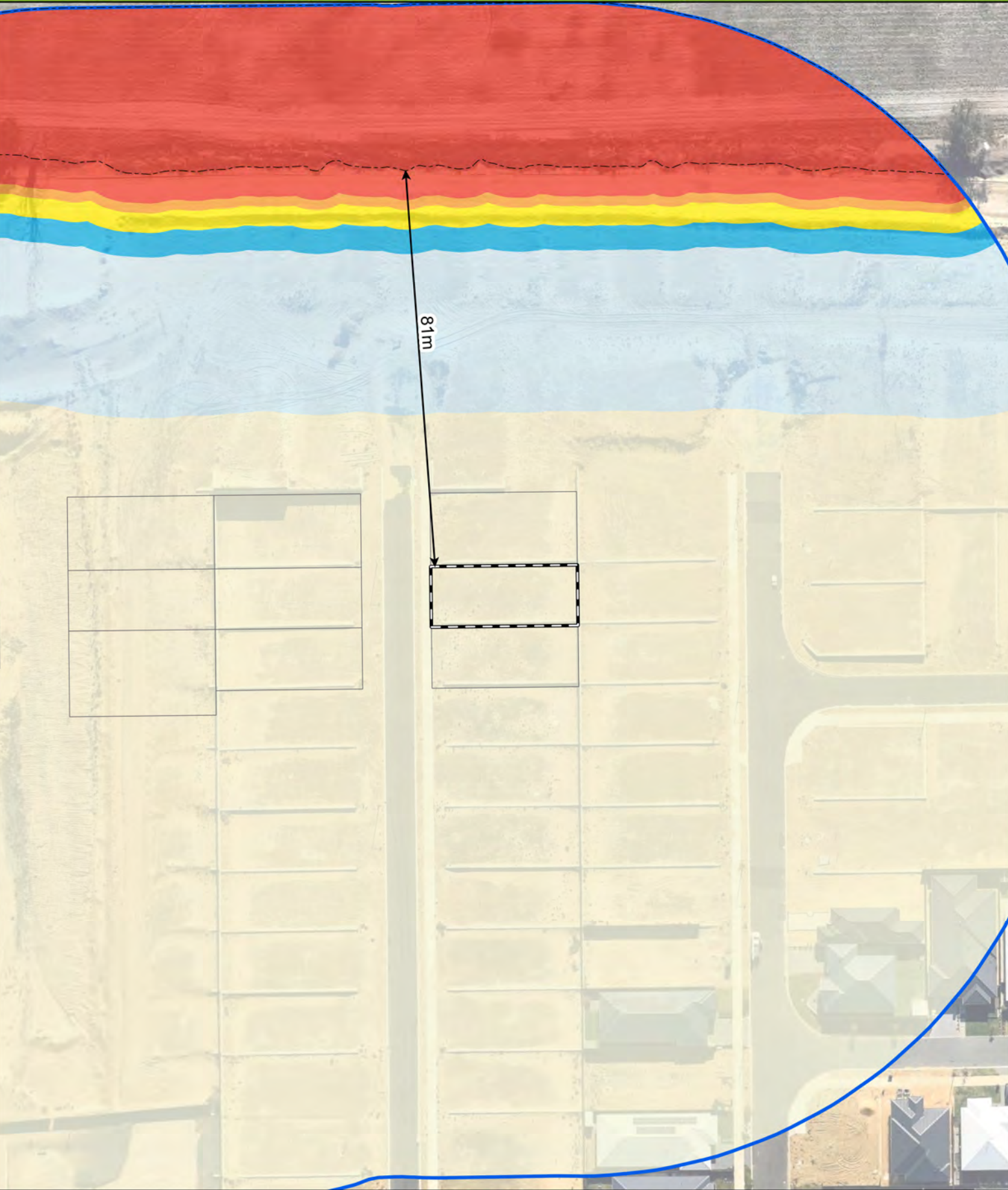
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 215 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 216, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	66 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

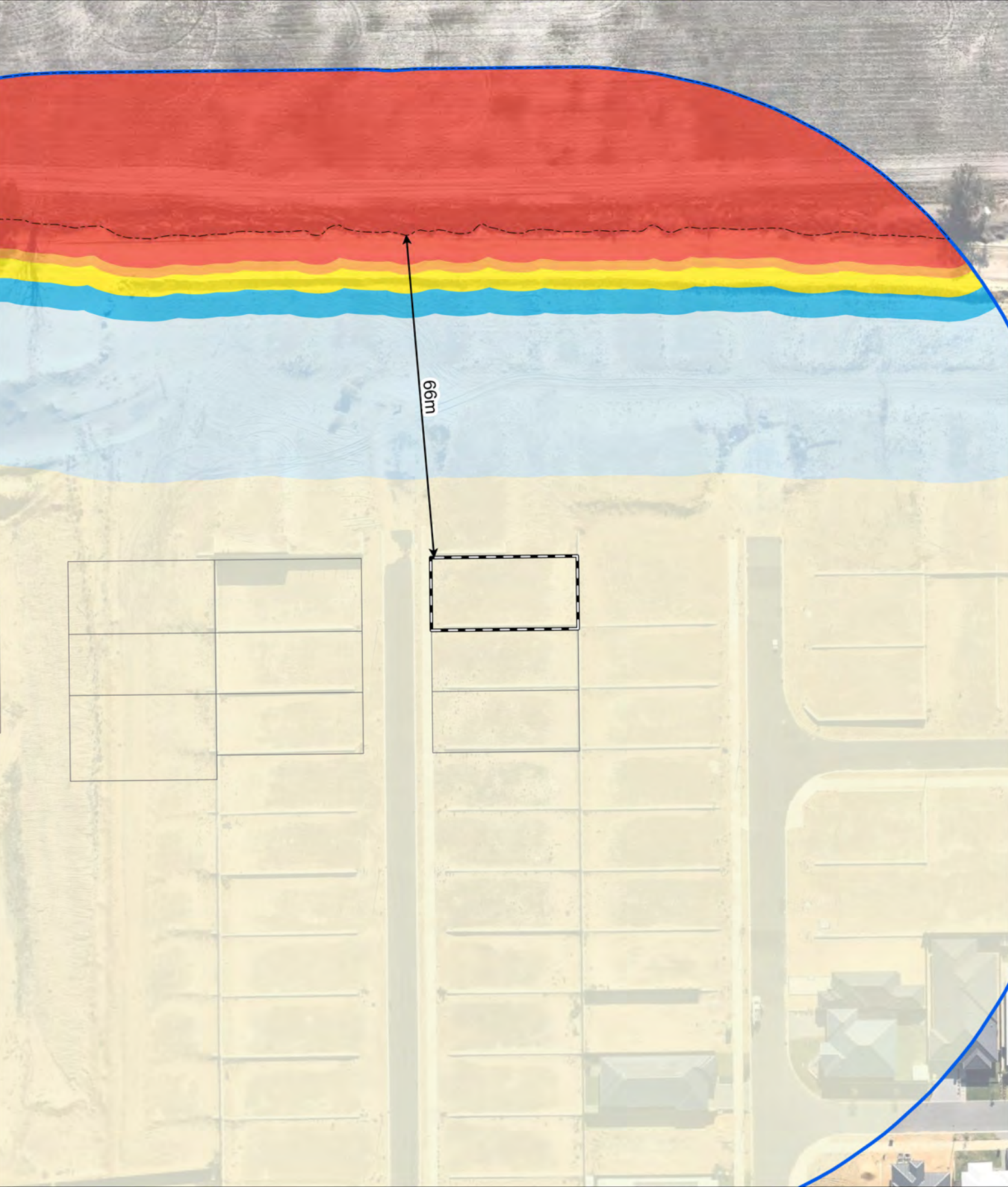
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 216 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



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Metres

Datum/Projection:
GDA 1994 MGA Zone 50

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A TETRA TECH COMPANY

Prepared by: GM Date: 7/08/2020

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 221, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	66 m	BAL - LOW

Practitioner Details

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Name Daniel Panickar
Eco Logical Australia

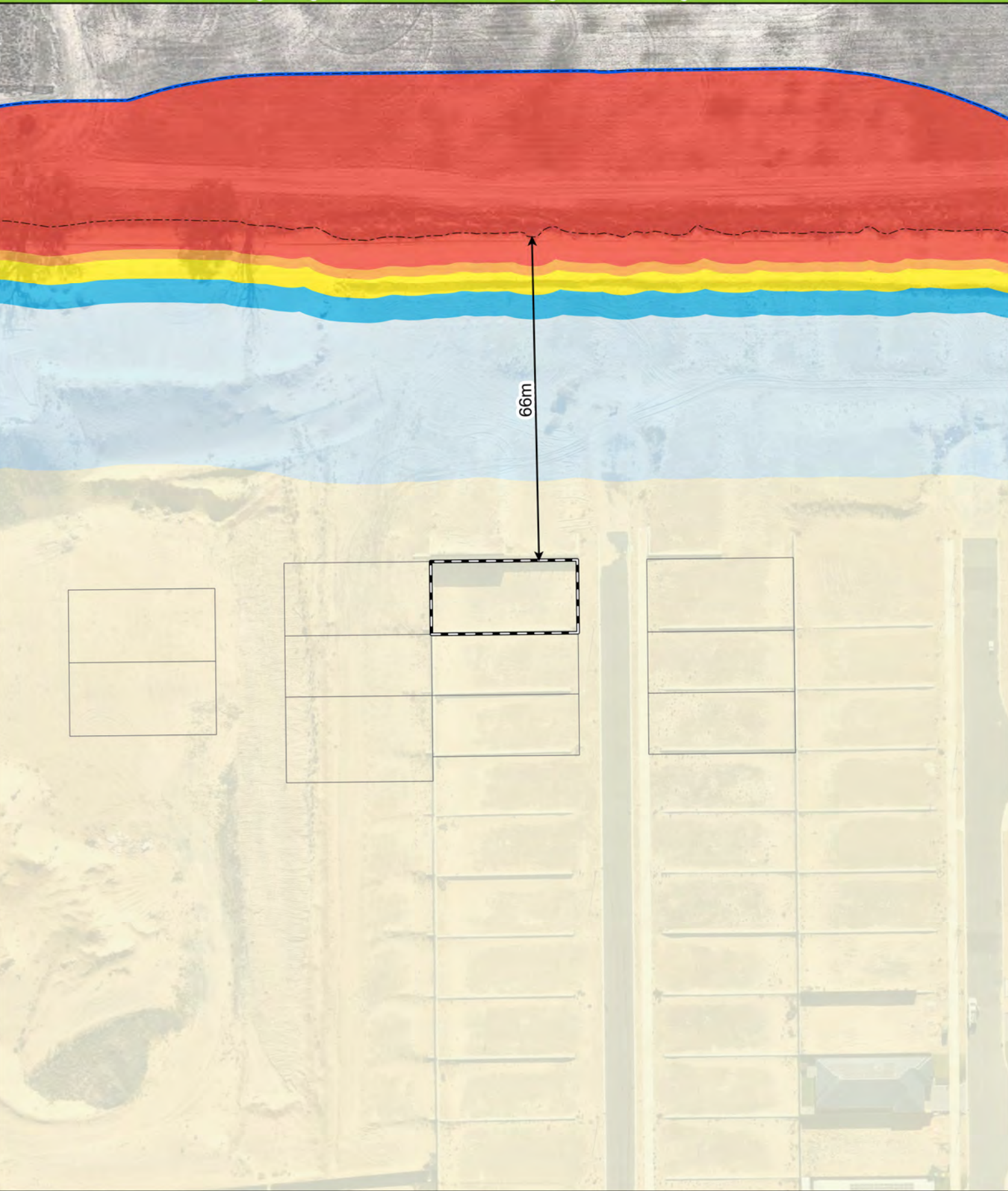
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 221 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 222, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	81 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

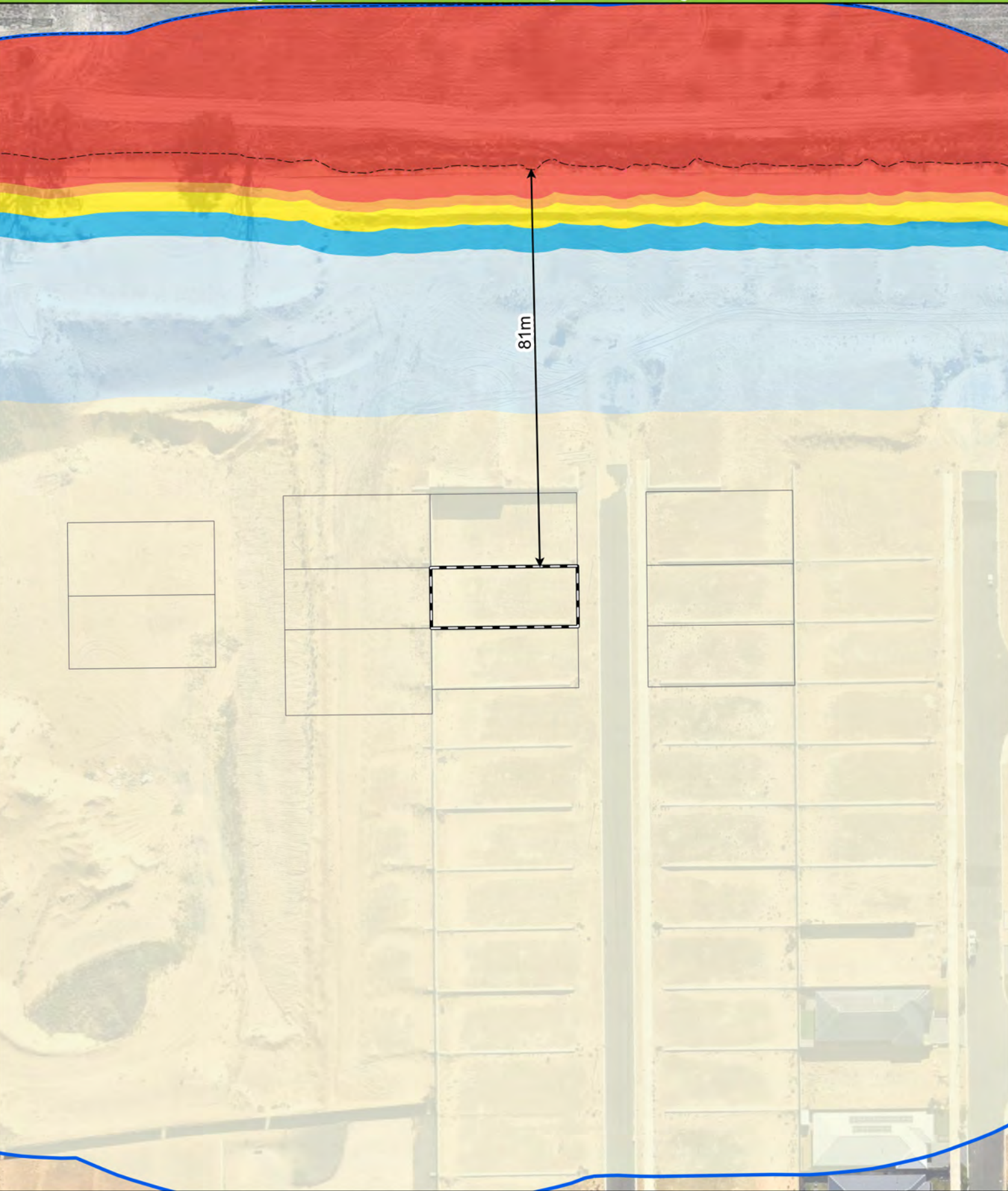
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 222 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 223, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	94 m	BAL - LOW

Practitioner Details

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Name Daniel Panickar
Eco Logical Australia

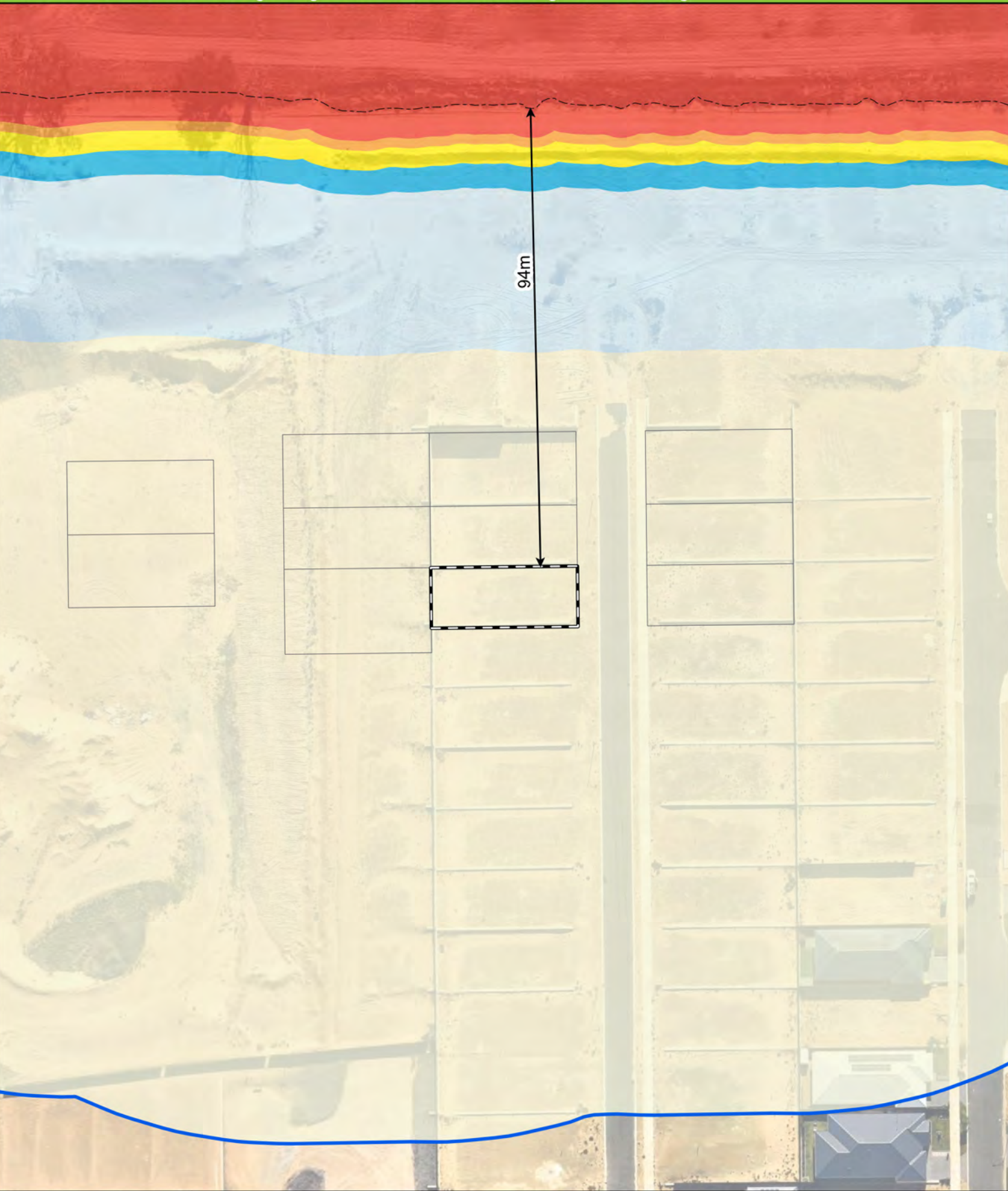
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 223 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 245, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	93 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

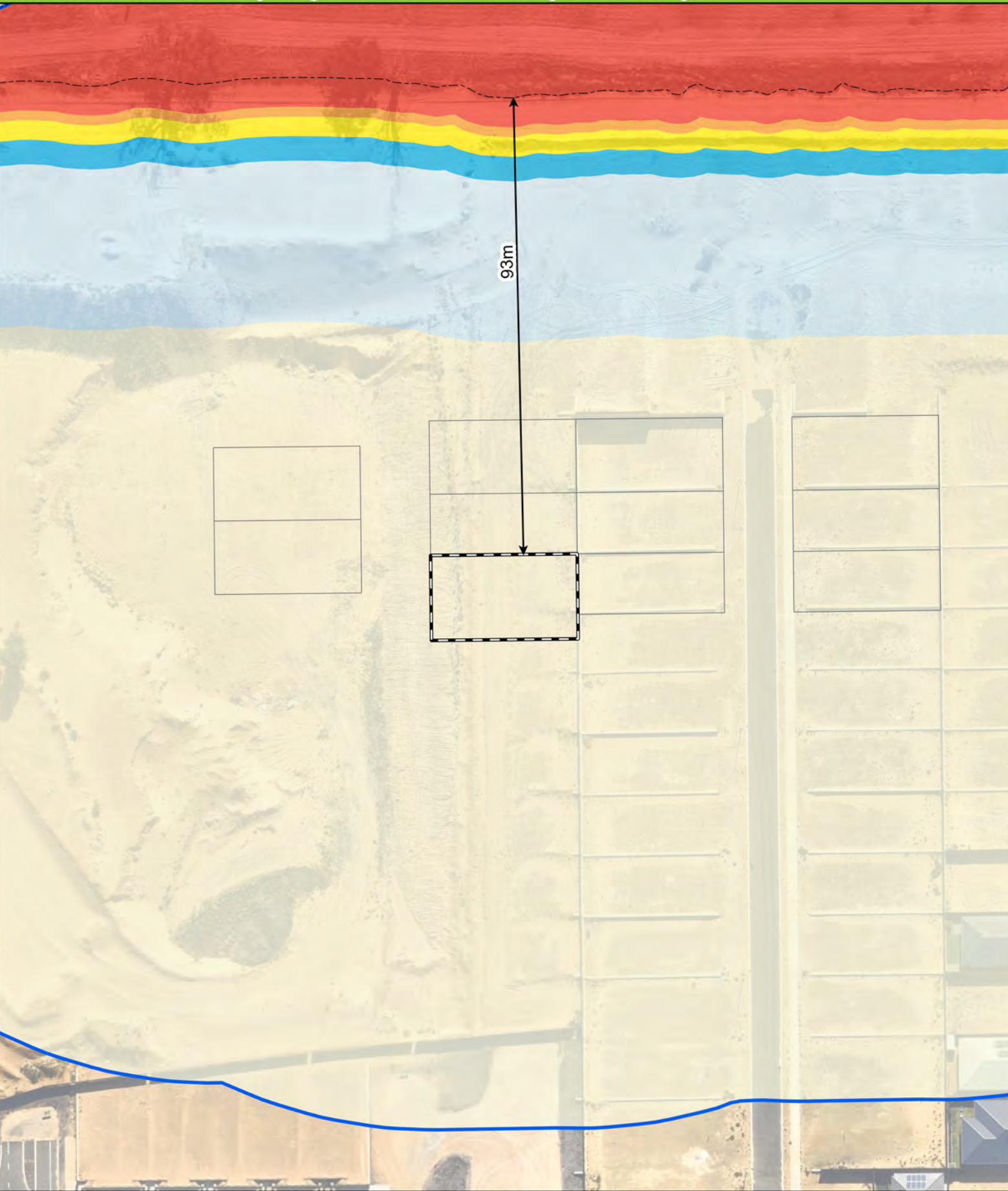
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 245 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 246, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	81 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

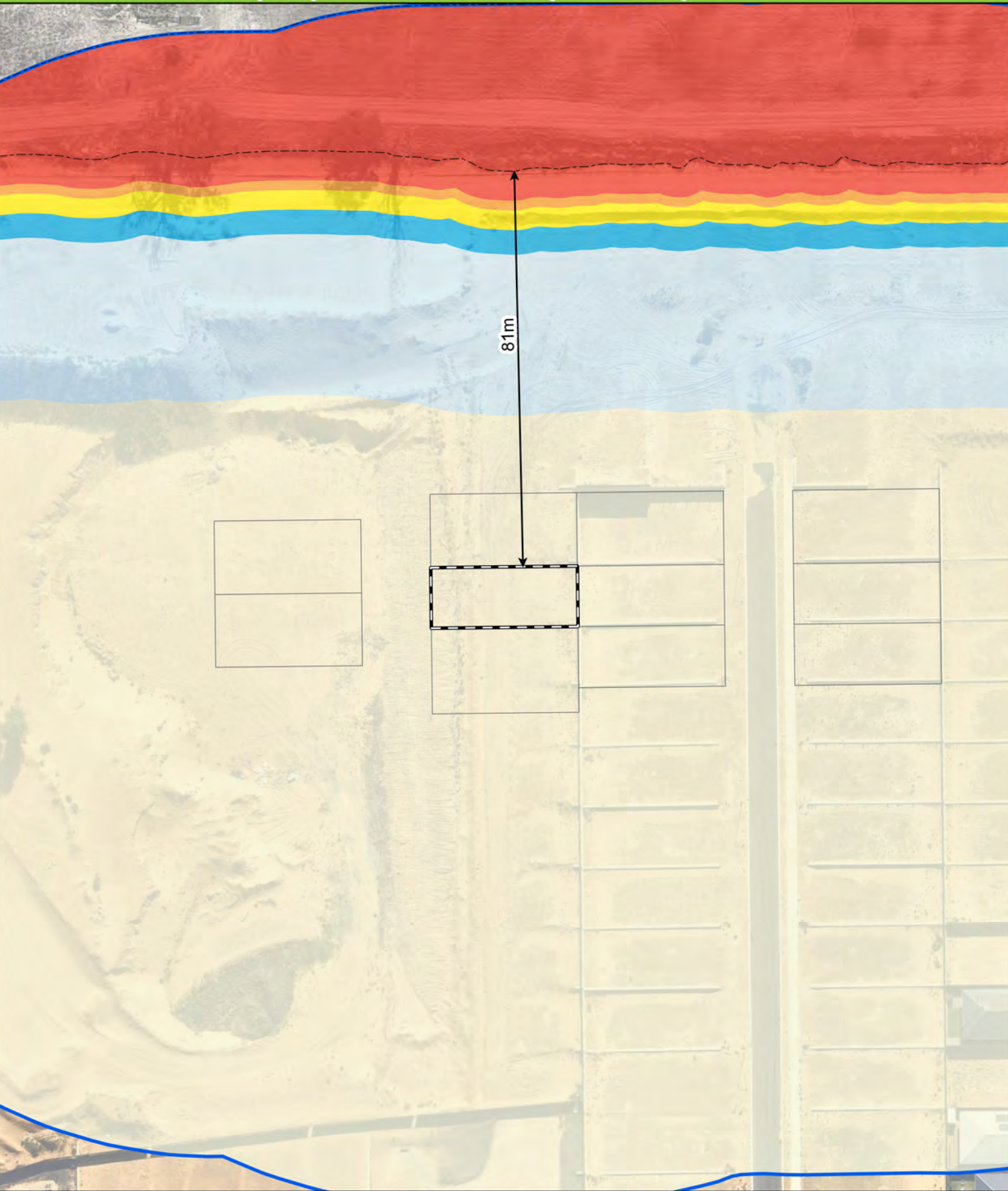
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 246 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
■	BAL - FZ
■	BAL - 40
■	BAL - 29
■	BAL - 19
■	BAL - 12.5
■	BAL - LOW



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 247, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	66 m	BAL - LOW

Practitioner Details

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Name Daniel Panickar
Eco Logical Australia

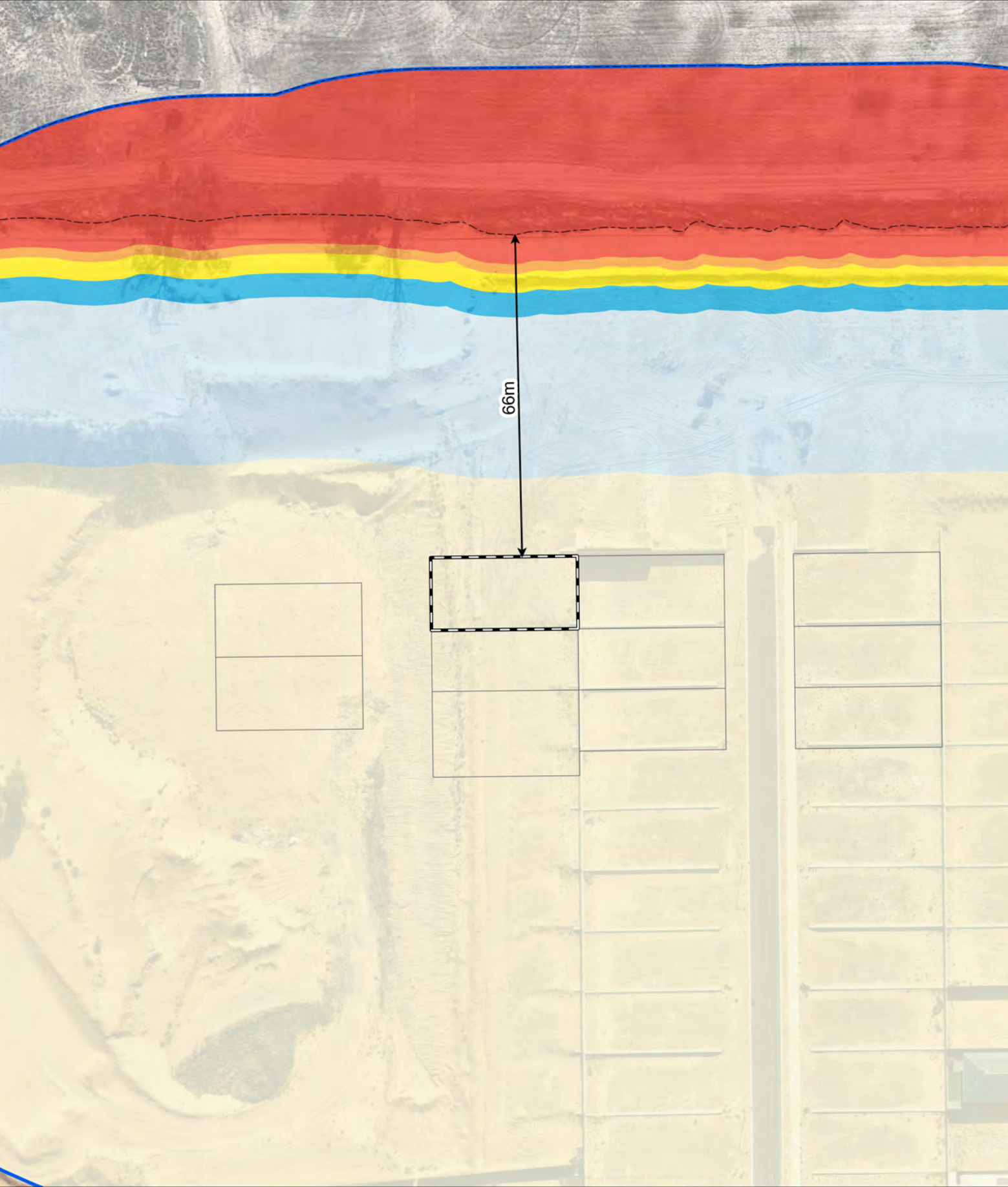
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 247 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
	BAL - FZ
	BAL - 40
	BAL - 29
	BAL - 19
	BAL - 12.5
	BAL - LOW



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Metres

Datum/Projection:
GDA 1994 MGA Zone 50

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A TETRA TECH COMPANY

Prepared by: GM Date: 7/08/2020

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 253, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	74 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

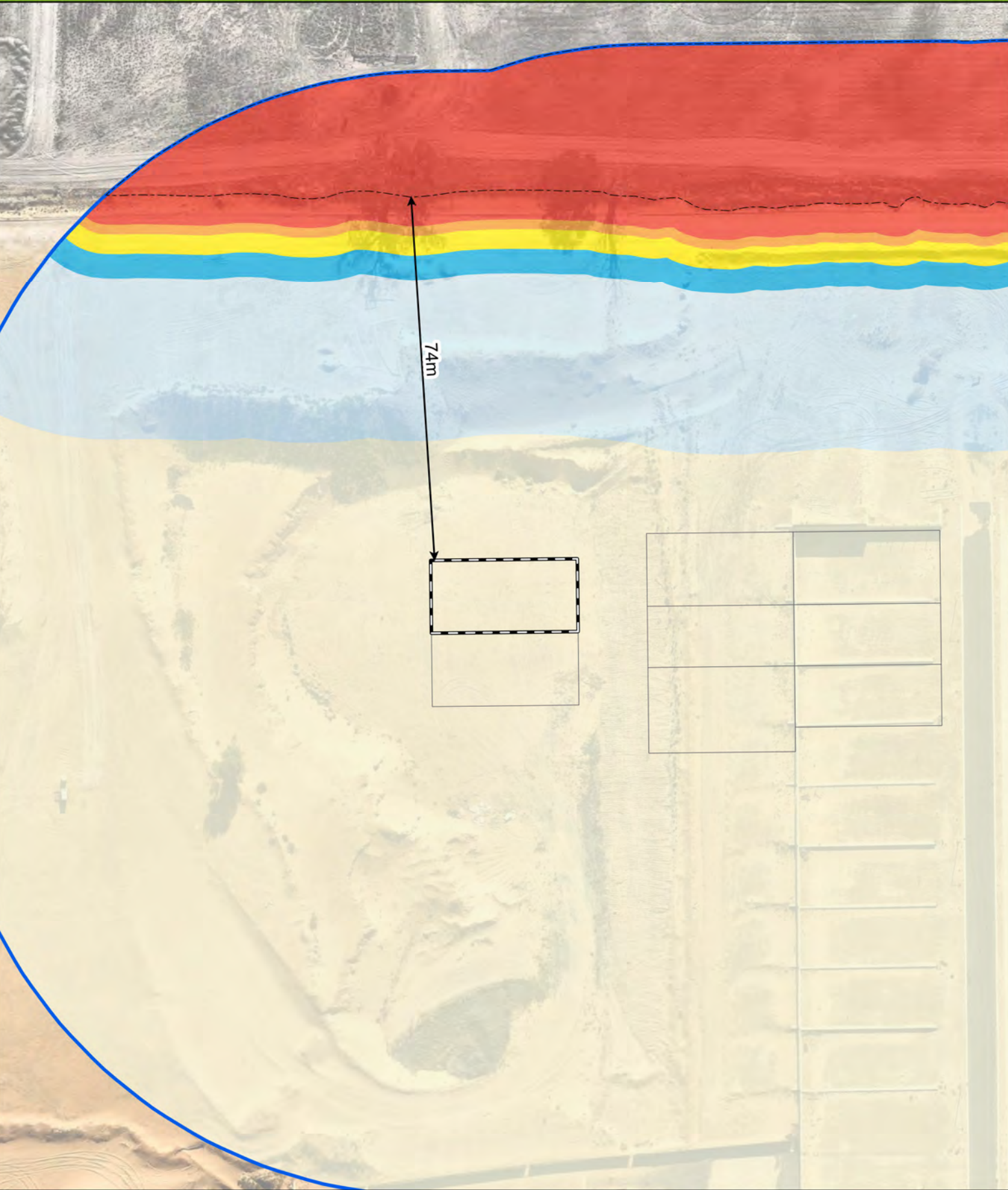
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 253 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	



0 5 10 20
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

Site Details

Address:	Lot 254, Stage 6 Brightwood Estate		
Suburb:	Baldivis, 6171	State:	WA
Local Government Area:	City of Rockingham		
Use of building	Residential Dwelling	Main BCA class:	Class 1a
Report / Job Number:	20PER-16887	Report Date:	11/08/2020

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G grassland	Upslope / Flat Land	89 m	BAL - LOW

Practitioner Details

I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.

Name Daniel Panickar
Eco Logical Australia

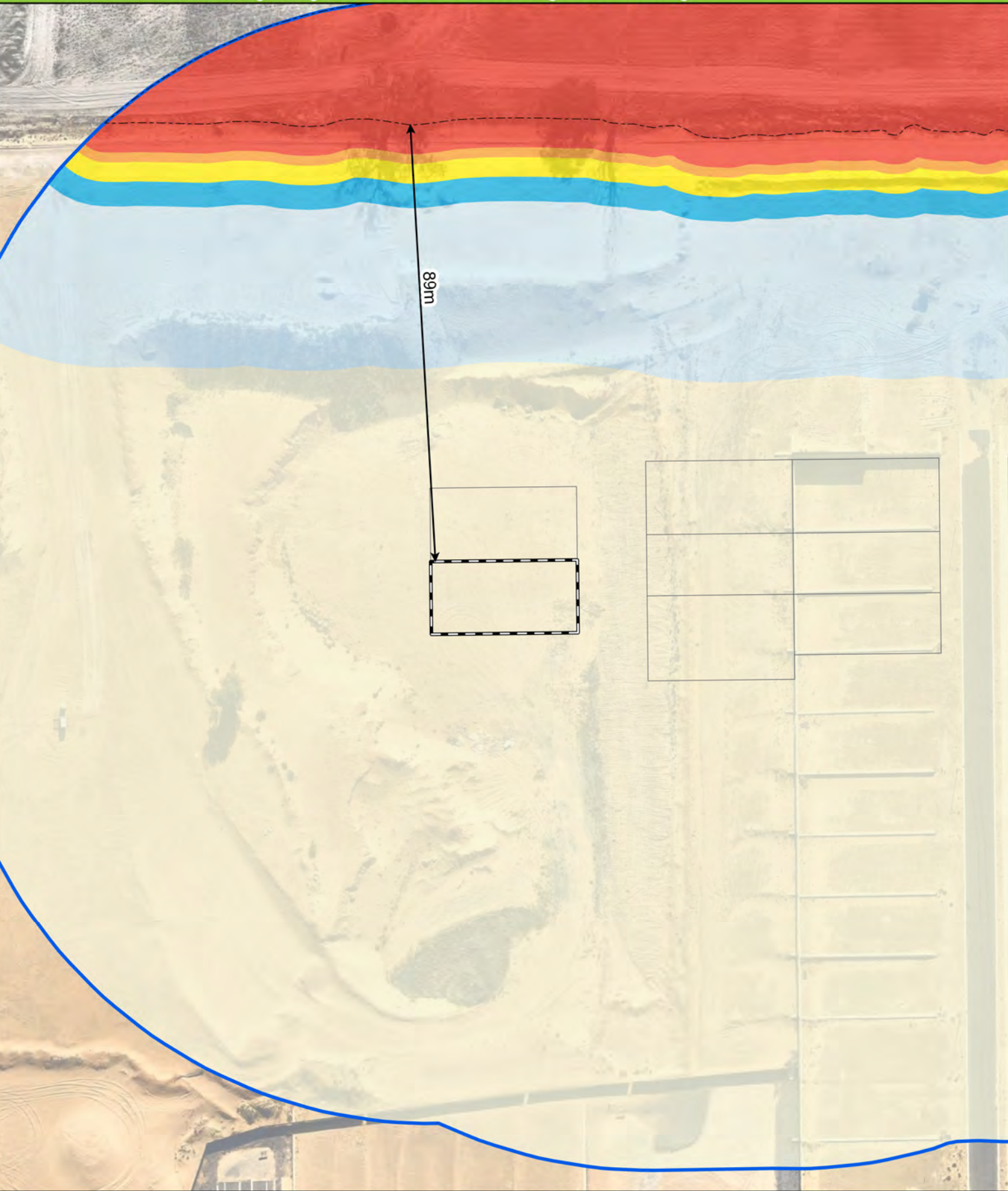
Signature: 

Certificate Date: 11/08/2020



Accreditation No: BPAD 37802
Expiry: December 2020

Bushfire Attack Level (BAL) Contours - Lot 254 (BAL - LOW)



- Legend**
- 100m site assessment
 - 150m site assessment
 - Lot location
 - Bushfire Hazard Interface
 - Distance to bushfire hazard interface

Bushfire Attack Level (BAL)	
BAL - FZ	
BAL - 40	
BAL - 29	
BAL - 19	
BAL - 12.5	
BAL - LOW	

