



## DIGITAL DATA DOCUMENTATION

### WIMMERA CMA

### PARTS OF WEST OF WIMMERA RIVER TRENCH, YARRIAMBIACK CREEK & NORTH EAST FLAT PLAINS REGIONS AND SOUTH OF WIMMERA RIVER TRENCH & UPPER WIMMERA- 1M CONTOURS

### VOLUME 1189504NOM

#### Summary

##### **Project**

Airborne Laser Scanning (ALS) was flown over the Wimmera CMA region between January 5<sup>th</sup> and January 31<sup>st</sup> 2005.

##### **Data**

This volume contains 1m interval cartographic contours in 1476 tiles over West of Wimmera River Trench, Yarriambiack Creek & North East Flat Plains Regions and South of Wimmera River Trench & Upper Wimmera (parts of Pyrenees, Northern Grampians, Yarriambiack & Hindmarsh Shires and Horsham & Ararat Rural Cities).

Contours have been generated from smoothed and thinned ALS ground strikes.

- 1m contour files are supplied in ESRI shapefile format.
- 1m contour tile layout for whole project area is supplied in DXF format



*This data is GDA-compliant*

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## 1. PROJECT REPORT

**Acquisition:** Airborne Laser Scanning (ALS) data was acquired from a fixed wing aircraft between January 5<sup>th</sup> – January 31<sup>st</sup> 2005.

**Ground Support:** GPS base station data was acquired without incident. The ground check points acquired allowed an assessment of the accuracy of the ALS data.

**Data Processing:** Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using a single algorithm across the project area. Manual checking and editing of the data classification further improved the quality of the terrain model.

**Further Processing:** The cartographic contours represented in this volume have been generated from thinned and smoothed ALS ground strikes.

The cartographic contours are designated “CARTOGRAPHIC CONTOURS WITHOUT BREAKLINES”. They are compiled from a rigorous smoothing and thinning of points followed by triangulation. Areas such as river-banks may not have continuous contours as vegetation canopies can prevent sufficient laser ground strikes being achieved to produce continuous contours. Contours are generated at 1m intervals.

**Data Presentation:** The data provided on this volume has been supplied in accordance with a specification agreed with the primary client. Subsequent users experiencing difficulties in handling the data should please contact AAMHatch to arrange a more appropriate data presentation.

**Further Issues:** Laser strike penetration through to the ground is reduced in areas of thick vegetation.

## 2. DATA INSTALLATION

Data format : ESRI Point Shapefile & DXF  
Number & type of media : Maxtor portable hard drive  
Number of files on media : 5904 x Shapefiles, 1 x DXF and Readme\_1189504NOM.PDF  
Data formatted on : 28.02.2007  
Disk volume : 1189504NOM  
AAMHatch Job Manager : Rohan Potter (03) 9572 1033  
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### **README FILE**

This document (Readme\_1189504NOM.PDF) is provided as an Acrobat file in this volume.

To open the file, double click on the PDF file to activate Acrobat Reader Software.

Adobe Acrobat Reader may be downloaded from:

<http://www.adobe.com/products/acrobat/readstep2.html>

### **REVISION HISTORY**

Volumes previously issued under this project include:

Volume	Date	Data Title	Contents
1189501NOM	29.09.2006	WCMA Contours	Cartographic Contours – Priority Area
1189502NOM	31.01.2007	WCMA Contours	Yarriambiack Creek & North East Flat Plains – 1m Contours
1189503NOM	19.02.2007	WCMA Contours	West of Wimmera River Trench – 1m Contours

### **FILE SIZES AND NAMES**

Data is provided in tiles 3km by 3km to the following filenames convention:

eg. WI5225997.shp      WI - project abbreviation  
                                 522 - coordinate easting (in thousands) of south west tile corner  
                                 5997 - coordinate northing (in thousands) of south west tile corner  
                                 .shp - ESRI Shapefile  
                                 .shx - Associated ESRI file  
                                 .prj - Associated ESRI file  
                                 .dbf - Associated ESRI file

### **FILE LISTING**

A full file listing can be provided upon request.

**LEGEND****Layername**

MINOR CONTOUR  
MAJOR CONTOUR

**Description**

1m contour interval  
5m contour interval

**SAMPLE LISTING (ESRI FORMAT)**

Attributes of W16185901				
FID	Shape	ELEVATION	CONTOURTYP	
47	Polyline ZM	192	Minor Contour	
48	Polyline ZM	192	Minor Contour	
49	Polyline ZM	190	Major Contour	
50	Polyline ZM	191	Minor Contour	
51	Polyline ZM	190	Major Contour	
52	Polyline ZM	191	Minor Contour	
53	Polyline ZM	195	Major Contour	
54	Polyline ZM	193	Minor Contour	
55	Polyline ZM	194	Minor Contour	
56	Polyline ZM	196	Minor Contour	
57	Polyline ZM	197	Minor Contour	
58	Polyline ZM	198	Minor Contour	
59	Polyline ZM	197	Minor Contour	

Record: 1 Show:   Records (0 out of 587 Selected.)

### 3. METADATA

#### DATA CHARACTERISTICS

Characteristic	Description
Format	ESRI Point Shapefile & DXF
Captured terrain model	2.2m average point separation
Data smoothing	Cartographic dataset smoothed to 0.4m tolerances
Data thinning	Cartographic dataset thinned to 0.3m tolerances
Contours	1m interval generated from thinned and smoothed ALS ground strikes
Laser return	Last pulse
Laser footprint size	0.6m

#### REFERENCE SYSTEMS

	Horizontal	Vertical
Datum	GDA94	AHD
Projection	MGA Zone 54	N/A
Geoid Model	N/A	Ausgeoid98
Reference Points	GW01 664 022.012 E 5 884 903.992 N  WA01 624 088.246 E 5 988 292.940 N  JE01 589 893.491 E 6 001 142.074 N  GPSnet Horsham 604 915.999 E 5 935 320.595 N  DI01 540 174.638 E 5 980 612.222 N  KA01 540 983.565 E 5 922 097.586 N	GW01 260.592 RL  WA01 118.763 RL  JE01 81.001 RL  GPSnet Horsham 137.82 RL  DI01 167.894 RL  KA01 166.495 RL



*This data is GDA-compliant*

**SOURCE DATA**

	Source	Description	Ref No	Date
Laser scanning	AAMHatch	25,000 Hz	2200810	05-31.01.2005
GPS base data	AAMHatch / Geomatix	Static GPS	2200810	05-31.01.2005
Base Stn coords	AAMHatch / Geomatix	Static GPS	2200810	31.01.2005
Test points	AAMHatch / Geomatix	GPS	2200810	25.02.2005

**EXPECTED ACCURACY**

Project specifications and technical processes were designed to achieve accuracies as follows:

	Measured Point	Derived Point	Basis of Estimation
Vertical data	< 1.5m	0.5m	Deductive estimate / Project design
Horizontal data			System specifications ( $1/2000$ flying height)
Vertical data		0.25	Comparison with 426 test points (Western region)
Vertical data		0.22	Comparison with 574 test points (North East region)
Vertical data		0.27	Comparison with 374 test points (South East region)

**NOTES ON EXPECTED ACCURACY:**

- Values shown represent standard error (68% confidence level or 1 sigma), in metres.
- “Derived points” are those interpolated from a terrain model.
- “Measured points” are those observed directly.
- Accuracy estimates for terrain modeling refer to the terrain definition on clear ground. Ground definition in vegetated terrain may contain localised areas with systematic errors or outliers which fall outside this accuracy estimate.
- Laser strikes have been classified into “ground” and “non-ground”, based upon algorithms tailored for major terrain/vegetation combinations existing in the project area. The definition of the ground may be less accurate in isolated pockets of dissimilar terrain/vegetation combinations.

**LIMITATIONS OF DATA**

- The definition of the ground under trees may be less accurate.
- Laser strike penetration through to the ground is reduced in areas of thick vegetation.

**DATA VALIDATION**

- Ground data in this volume has been compared to 1374 test points obtained by field survey and assumed to be error-free. The test points were distributed in seven groups across the mapping area and located on clear ground.
- Data classification has been manually checked and edited against the project orthophoto imagery.

**USE OF DATA**

- Intended use : Accurate terrain definition for natural resource management

#### 4. CONDITIONS OF SUPPLY

The data in this volume has been commissioned by **WIMMERA CMA**.

The data in this volume is provided by AAMHatch Pty Limited (AAMHatch) to **WIMMERA CMA** under the client's Terms of Engagement, which require **WIMMERA CMA** to assume beneficial ownership, subject to the following conditions:

1. This file (Readme\_1189504NOM.PDF) is always stored with the unaltered data contained in this volume.
2. The data is not altered in any way without the approval of AAMHatch. The data may be copied from this file to another.
3. The data is not used for purposes beyond that explicitly agreed in the description of the Services provided by AAMHatch.

Any breach of these conditions will result in the immediate termination of the license issued by AAMHatch, and **WIMMERA CMA** will indemnify AAMHatch from all resulting liabilities.

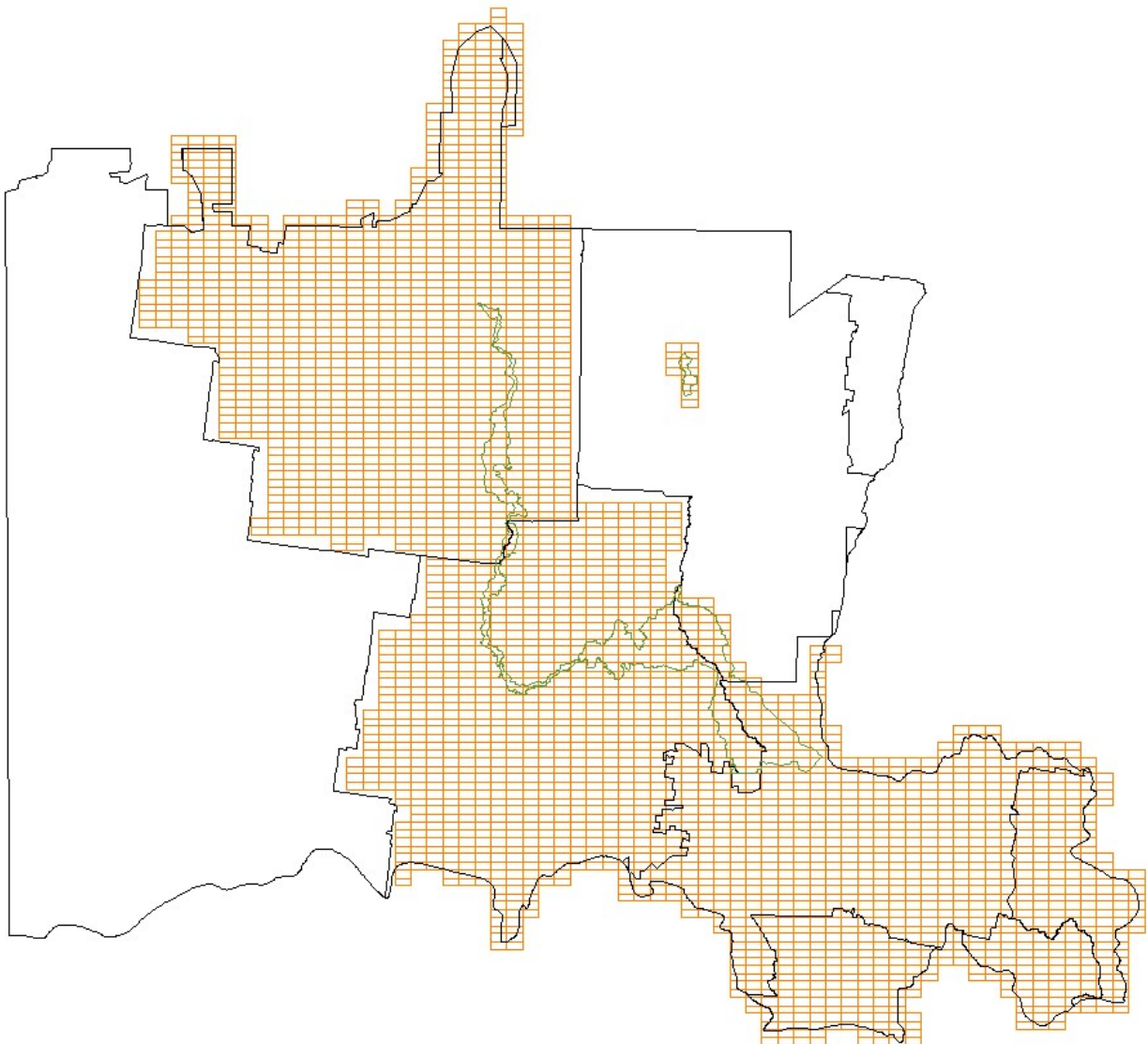
Any problems associated with the information in the data files contained in this volume should be reported to:

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## 5. VALIDATION PLOTS

(i) Tiles supplied in this Volume





(ii) Screen grab of typical 1m cartographic contours (steep terrain)



(ii) Screen grab of typical 1m cartographic contours (flat terrain)

