Western Ringtail Possum Assessment

of

St Mary's Church Grounds

Busselton

August 2021
Version 1

On behalf of:
City of Busselton
2 Southern Drive,
BUSSELTON WA 6280
T: (08) 9781 0444

Prepared by:
Greg Harewood
Zoologist
PO Box 755
BUNBURY WA 6231
M: 0402 141 197
E: gharewood@iinet.net.au

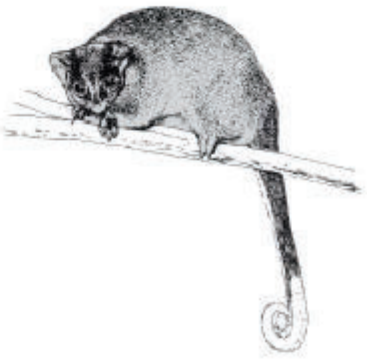


TABLE OF CONTENTS

TABLES

FIGURES

1. INTRODUCTION

This report details the results of a western ringtail possum (WRP) (*Pseudocheirus occidentalis*) assessment of vegetation located within and near St Mary's Anglican Church, Busselton.

Several peppermint trees bordering the church property have been prioritised for removal because they are dead or near dead and have been deemed a public safety risk due to ongoing decay. Figure 1 shows the approximate area of trees to be removed. The trees (eight in number) are all peppermints (*Agonis flexuosa*).

It is understood that the City will be applying for a clearing permit in the near future from the Department of Water, Environmental and Regulation (DWER) to allow for lawful removal of the trees in question.

The trees and others nearby are highly like to be used by WRPs as habitat and therefore a management plan will need to be formulated to mitigate any possible impacts on the species which may occur during the proposed tree removal. The survey reported to on here has been carried out to assist in the design of the management plan and to inform DWER of the likely impacts of the proposal on WRPs.

2. SCOPE OF WORKS

To fulfil the anticipated requirements of DWER and to assist in the formulation of an appropriate management plan the following scope of works has been carried out:

- A single day survey to identify dreys, scats, individuals and areas of suitable habitat with the defined survey area;
- A single night survey to provide an estimate of the abundance an distribution individuals within the defined survey area;
- Preparation of a brief report detailing methods and results including:
  - Implications based on the number and distribution of WRPs found;
  - Recommendations that will help to mitigate impacts and address regulatory requirements for the works.

3. METHODS

A daytime survey was carried out on the 22 July 2021 and involved searching for and recording evidence of western ringtail possum (i.e. dreys, scats, individuals) and also hollow bearing trees that may represent potential daytime refuge sites.

A nocturnal count was undertaken on the 12 August 2021. This aspect of the assessment was carried out on foot, along close spaced transects while looking for animal eye shine using a high powered LED head torch. The nocturnal survey also included initial "stag watching" of the eight dead/dying trees just prior to last light in an effort to determine if any were being used as daytime refuge sites as would be evidenced by WRP emerging from dreys/hollows.

The area of trees that requiring removal is shown in the attached figures. The survey included this area and other vegetation within the grounds of St Mary's Church. Victoria Square to the west and the banks of the Vasse River (Arthur and Norah Breeden Park) immediately to the south were also assessed. These areas combined represent the survey area.

4. SURVEY CONSTRAINTS

The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. It should also be recognised that site conditions can change with time.

The effectiveness of survey work will vary from site to site and can be dependent on factors such as the total area surveyed, topography, access, location, vegetation type and density, weather, the season in which the survey work was undertaken, equipment used and the experience of the person carrying out the survey. Survey results obtained for some sites can also be complicated by the fact that a proportion of the WRPs can have home ranges that cross one or more lot boundaries and variations in nocturnal counts on different nights may reflect this. The consequences of identified survey limitations should however be considered in the context within which the results will be used.

The assessment reported on here has included one diurnal inspection to search for evidence of WRPs and one nocturnal count aimed at locating WRPs within the trees proposed to be removed and some adjoining areas. The number of WRPs observed represents the minimum number of WRPs that were using the site for some purpose at the time of the survey.

The aim of the survey work reported on here was to provide sufficient information to allow for an assessment of the impact of the proposed tree removal may have on WRPs utilising the site to be made so that appropriate management measures can be formulated. It is the Author's opinion, taking into account the limitations encountered, that the survey was

conducted to a standard suitable for its intended use and complies with the requested scope of works.

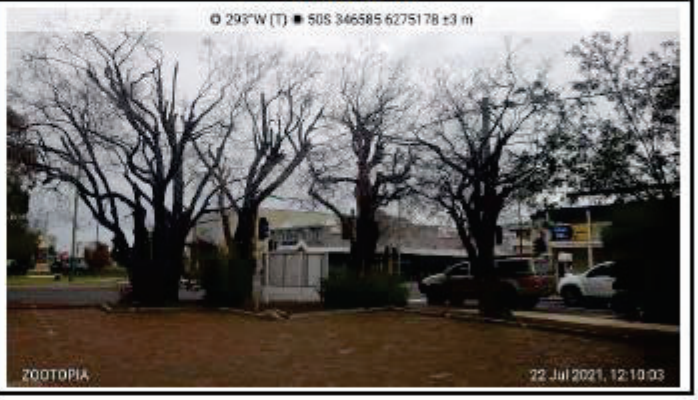
5. RESULTS

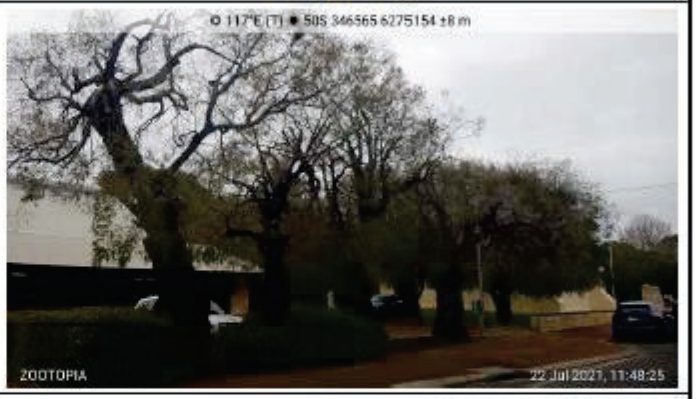
5.1 Habitat Assessment

Almost all the vegetation within the survey area is represented by peppermint trees. Vittoria Square also contains some large non-endemic eucalyptus trees. In addition to some non-endemic eucalyptus trees the Arthur and Norah Breeden Park also contains some exotic deciduous trees. Some areas also contain large shrubs (including several *Callistemon* spp. specimens).

Example images of the vegetation within the survey area are shown in Table 1.

Table 1: Example images of the vegetation present within the survey area

Habitat Description	Example Image
Northern patch of peppermint trees targeted for removal (corner Albert and Queen Street).	

Habitat Description	Example Image
Southern patch of peppermint trees targeted for removal (Queen Street).	
Peppermint trees bordering the Arthur and Norah Breeden Park (Peel Terrace).	
Peppermint trees within Victoria Square.	

Overall, the vegetation present within the survey area represents good WRP habitat given the presence of numerous mature peppermint trees and good canopy connectivity in each of the respective areas (i.e. Church grounds, Victoria Square and Arthur and Norah Breeden Park).

The eight peppermint trees targeted for removal are either dead or very close to death with some still having a small number of leaves. These trees still have some habitat value mainly as potential refuge/dispersal habitat. They still have some foraging value though this is relatively low and is likely to decrease further as each trees heath continues to deteriorate.

5.2 WRP Daytime Observations

The results of the daytime survey are presented in Figure 2.

Evidence of western ringtail possums using vegetation within the survey area was found during the daytime survey in the form of dreys and scats at number of locations. Three dreys were located within the St Mary's Church and Family Centre grounds, all in the southern half of the property around the actual church. An additional nine dreys were located in other sections of the survey area.

Scats were found to be common in the St Mary's ground under most trees, though in some cases it appears that they have been accumulating over some time. Scats were also located in other sections of the survey area.

Potential hollows were detected in a number of trees and some of these may be suitable for use by WRPs. In particular the eight trees targeted for removal appeared to contain at least six potential hollows. A small number of possible hollows were also located in other sections of the survey area.

It should be noted that forks in tree branches, subtle cavities in tree trunks and man-made structures (e.g. roof cavities) are also used by WRPs and therefore observations of dreys and hollows only provide a guide to WRP habitat use/quality as other opportunities for daytime refuge may exist.

5.3 WRP Nocturnal Counts

The results of the nocturnal count are presented in Figure 3.

Five WRPs were observed within the grounds of the St Marys Church and Family Centre. Three of these individuals were confirmed as using hollows within the trees propose for removal as daytime refuges despite the fact that they harbour very little foliage suitable for foraging. Two of the possums are possibly sharing a hollow or at least are using hollows in the same tree.

An additional 23 WRPs were recorded in neighbouring reserves/properties (i.e 28 WRPs recorded in total).

6. CONCLUSION & RECOMMENDATIONS

The primary aim of the assessment was to determine potential impacts on WRPs that may arise as a consequence of removing the eight peppermint trees bordering the St Mary's Church property.

The assessment confirmed that, at the time of the survey, three WRPs were using hollows in two of the eight trees as daytime refuge habitat (Note: none of the trees contain dreys). This represents the main issue that will need to be managed prior to or when the trees are removed.

The removal of the trees is unlikely to impact significantly on the amount of foraging habitat present in the general area given their poor quality and the presence of significant numbers of peppermint trees (and some other plant species such as bottlebrush) in adjoining areas. The trees removal is also unlikely to significant affect dispersal opportunities in the area as they do not provide a viable linkage to any large areas of suitable habitat to the north or east.

Recommendations

Based on the assessment's findings the following recommendations for WRP management during the proposed tree removal are put forward for consideration:

It is recommended that any WRPs residing within the trees in question be relocated a short distance immediately prior to works commencing. At this stage the proposed relocation site is within the grove of peppermints immediately to the east of St Mary's Church. This area appeared the time of the survey reported on here to be underutilised despite the presence of what seems to be ideal habitat (grove of numerous peppermints with continuous canopy connectivity).

Currently three WRPs are utilising hollows in two of the trees. This scenario may change over time with some individuals possibly leaving and some possibly moving in.

When timing for the tree removal is finalised, it is recommended that another night survey be carried out about two weeks prior to works commencing to determine the numbers and location of any resident WRPs. If WRPs are present a suitable number of possum boxes/artificial dreys should be installed in the trees in question so as to provide alternative day time refuge sites to the hollows being used. It is hoped that the WRPs will take up residence in these in preference to the hollows. This can be encouraged by blocking off hollows when unoccupied at night or by making them less appealing (addition of nontoxic, acrid smelling material).

An alternative to this is to simply block off all hollows when they are unoccupied in the hope that the WRPs will move out of the area in search of alternative daytime refuge sites (and better foraging habitat), however this is the lesser of the two options provided in this case.

If no WRPs appear to be residing in the trees, as many of the hollows as possible should be block off to prevent subsequent use prior to clearing commencing.

Another survey should then be carried out on the night immediately prior to clearing to determine the status of hollows and possum boxes/artificial dreys so that appropriate measures can be employed on the day of actual clearing.

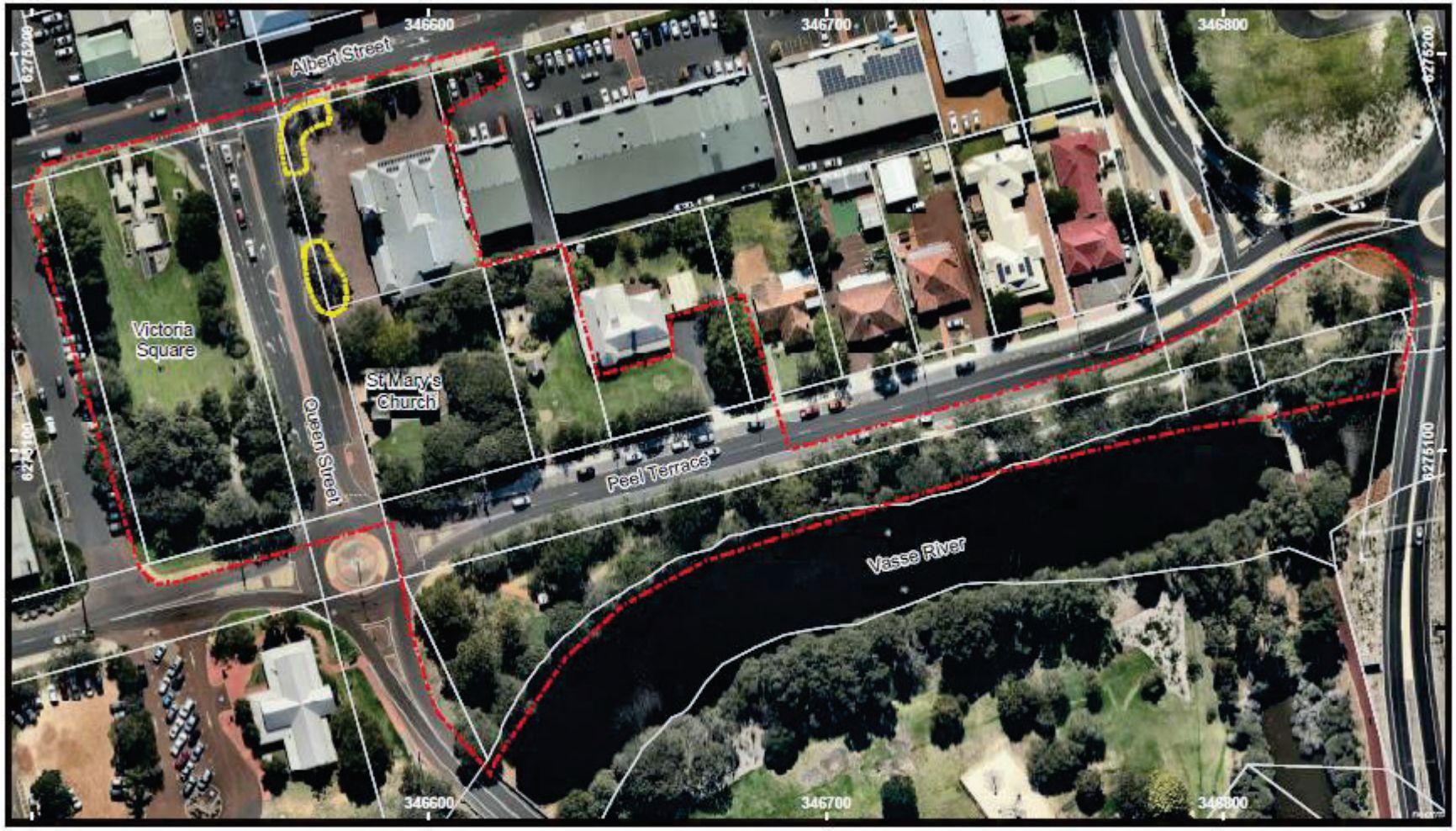
If the possum boxes/artificial dreys are utilised, they should be removed on the day of clearing (with the occupants retained inside). The possum boxes/artificial dreys should then be reinstalled in trees within the proposed relocation area at predetermined locations.

It is understood that the trees will initially be largely removed piece by piece by arborists using chainsaws. This in itself will reduce the chances of directly impacting on WRPs.

If the abovementioned plan is enacted and successful no WRPs should be encountered when clearing is undertaken. Nonetheless a suitably experienced and licenced fauna spotter/zoologist should be in attendance to manage any fauna relate issues should they arise as clearing as undertaken.

The proposed management measures should be discussed with the Department of Biodiversity Conservation and Attractions for review and comment.

FIGURES



Legend

- Survey Area
- Trees to be Removed

0 10 20 30 40 50

Metres

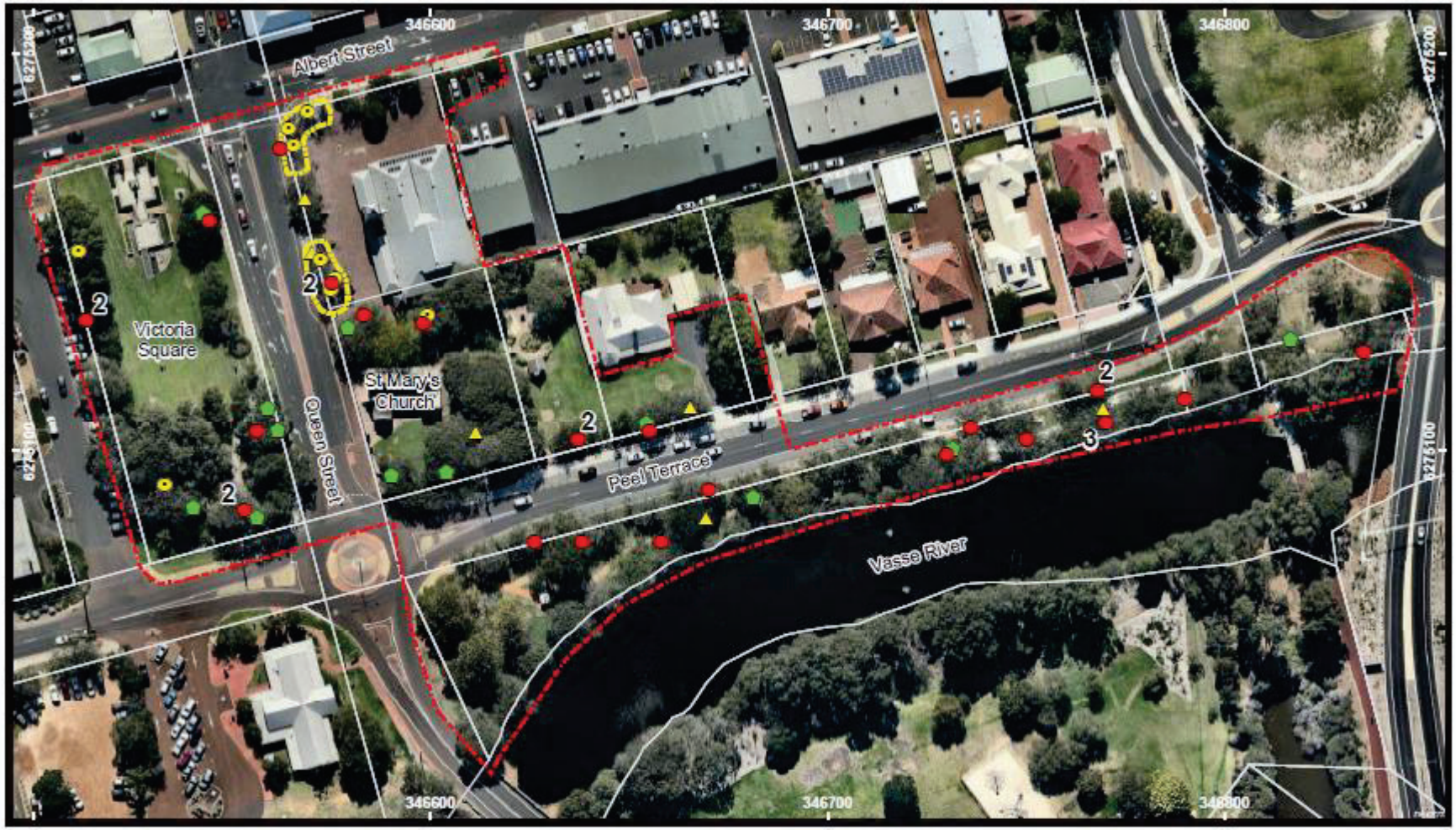
Fauna Survey

St Mary's Church
City of Busselton

Aerial Photograph

Drawn: G Harewood
Date: 13-Aug-21
Scale: 1:1,900
Projection/Coordinate System: UTM/MGA Zone 50

Figure: 1



Legend

- Survey Area
- Trees to be Removed
- Western Ringtail Possum
- Drey
- Scats
- Potential Tree Hollow

0 10 20 30 40 50
Metres

Fauna Survey

St Mary's Church
City of Busselton

Field Survey Observations

Drawn: G Harewood
Date: 13-Aug-21
Scale: 1:1,300
Projection/Coordinate System: UTM WGA Zone 50

Figure: 2

DISCLAIMER

This fauna assessment report ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood ("the Author"). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

In preparing the report, the Author has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise stated in the report, the Author has not verified the accuracy of completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. The Author will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to the Author.

The report has been prepared for the benefit of the Client and no other party. The Author assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of the Author or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

The Author will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.