

## Tough Mudder Pty Ltd

Tough Mudder Athletic Endurance Event, Mulgoa Road,  
Fernhill

Draft Environmental Management Plan

August 2013

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# 1. Introduction

This Environmental Management Plan (EMP) has been developed to control the potential environmental impacts associated with undertaking the Tough Mudder Athletic Endurance Event at Fernhill Estate, Mulgoa NSW (the event) from 30/11/13 – 01/12/13. The event is operated by Tough Mudder Limited Liability Corporation (LLC).

This EMP has been developed with reference to:

- The Development Approval (DA12/1380) issued by Penrith City Council for the previous event held in April 2013.
- The Statement of Environmental Effects (SEE) prepared by Mullane Planning Consultants (December 2012) for the previous event held in April 2013.
- Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).
- AS/NZS ISO 14001:2004 - Environmental Management Systems.
- Relevant NSW and Commonwealth legislation.

## 1.1 EMP Context

The Development Approval for the previous event was granted by Penrith City Council in accordance with Section 81(1) (a) of the *Environmental Planning and Assessment Act 1979* (EPA Act). The Development Approval for the event will require an EMP for the site submitted to Penrith City Council for consideration and approval. The EMP is required to address the environmental aspects of the construction, operation, and dismantling / rehabilitation of the event.

## 1.2 EMP Objectives

The primary purpose of the EMP is to document the process of implementing controls to ensure that the project environmental commitments, safeguards and mitigation measures are being implemented, monitored, audited and improved. The EMP is the key management tool and lead environmental management document in relation to environmental performance during the construction, operation and rehabilitation of the event.

The objectives of the EMP are to:

- Meet the conditions of the Development Approval related to environmental management;
- Comply with the requirements of relevant NSW and Commonwealth legislation; and
- Implement environmental controls and mitigation measures to adequately manage environmental risks.

## 1.3 Project & Site Description

The Tough Mudder event will be operated on the Fernhill Estate Site located at 1041-1117 Mulgoa Road, Penrith NSW (Lot 10 DP 615085). The site covers approximately 700 hectares, and includes the following site features:

- The site and event entrance is located on Mulgoa Road.
- Sections of the Blue Mountains National Park adjoin the western and north-western portions of the property.
- The event course is approximately 16.5km in length with 24 obstacles at regular intervals.



- The event course generally follows cleared open pasture areas, with the exception of established tracks through the vegetated central portion. The course has been altered from the previous layout to avoid the construction of obstacles in Endangered Ecological Communities (EEC).
- The event course includes waterway and waterbody crossings.
- Support facilities, including car parking, camping, food and beverage preparation and service, will be established around the eastern section of the site.
- Approximately 13,000 participants will take part in the event between the 30<sup>th</sup> November and 1st December 2013.

## 1.4 Summary of Proposed Work

The event will include the following activities:

### 1.4.1 Site Construction and Event Preparation

- Demarcation and localised clearing of course route.
- Establishment of course obstacles involving earthworks and installation of obstacle structures.
- Installation of environmental controls.
- Establishment of support infrastructure (car parking, water and aid stations, base / assembly area).

### 1.4.2 Event Operation

- Use of the course and support facilities by participants.
- Maintenance of course, environmental controls and support facilities.

### 1.4.3 Demobilisation and Rehabilitation

- Dismantling obstacle structures and support facilities.
- Reinstating removed topsoil and subsoil.
- Removal of environmental controls.
- Rehabilitation of exposed surfaces.

## 2. Legislative Requirements

Environmental legislation relevant to the Project is detailed below in Table 1.

**Table 1 - Legislation Summary**

Environmental Aspect	Key Legislation	Administering Authority	Applicability to Project
Environmental planning and approvals	<i>Environmental Planning and Assessment Act 1979</i>	Department of Planning & Infrastructure (DP&I)	Project Approval issued
Noise	<i>Protection of the Environment Operations Act, 1997</i>	Environmental Protection Authority (EPA)	Regulates water pollution and enforces penalties under the Act and Noise Control

Environmental Aspect	Key Legislation	Administering Authority	Applicability to Project
			Regulation (2008)
Water	<i>Protection of the Environment Operations Act, 1997</i>	EPA	Regulates water pollution and enforces penalties under the Act
	<i>Clean Waters Regulations, 1972</i>	Office of Environment & Heritage (OEH)	Pollution of waterways
Ecology	<i>Threatened Species Conservation Act, 1995</i>	EPA	Possible impacts on threatened species, communities or populations
	<i>National Parks and Wildlife Act, 1974</i>	OEH	Protection of native flora, fauna and items of significance to Indigenous communities
	<i>Native Vegetation Act, 2003</i>	EPA	Regulates the clearing of native vegetation
Air	<i>Protection of the Environment Operations Act, 1997</i>	EPA	Regulates air pollution and enforces penalties under the Act and Clean Air Regulation (2010)
	<i>Dangerous Goods Act, 1975</i>	WorkCover NSW	Transport, storage and use of dangerous goods
Waste	<i>Protection of the Environment Operations Act, 1997</i>	EPA	Regulates waste and enforces penalties under the Act and Waste Regulation (2005)

## 3. Environmental Management

### 3.1 Structure and Responsibilities

Tough Mudder LLC is responsible for the implementation and compliance of the EMP. Key personnel and responsibilities are summarised below in Table 2.

**Table 2 - EMP Implementation Responsibilities**

Role	Responsibilities
Project Manager	<p>The Project Manager has responsibility and accountability for undertaking the event including:</p> <ul style="list-style-type: none"> <li>Approval and endorsement of the EMP.</li> <li>Contractually bind the contractors to compliance with this EMP.</li> </ul>

	<ul style="list-style-type: none"> <li>• Regularly monitoring the environmental performance of contractors.</li> <li>• Allocating adequate resources to enable key personnel to effectively fulfil their roles.</li> <li>• Demonstrate commitment to the EMP by participating in environmental inspections and reporting.</li> <li>• Reviewing overall environmental performance against the EMP objectives.</li> <li>• Stop work in the event of a pollution incident.</li> <li>• Identifying and reporting environmental non-conformance to the appropriate authorities.</li> </ul>
Site Supervisors	<p>Site supervisors have responsibilities for implementing environmental controls and management measures including:</p> <ul style="list-style-type: none"> <li>• Communicating environmental performance to the Project Manager.</li> <li>• Participating in environmental inspections and reporting.</li> <li>• Perform surveillance and monitoring of environmental controls to ensure that they are established and maintained with requirements.</li> <li>• Monitoring the work of subcontractors working on site.</li> <li>• Ensuring that environmental protection requirements are communicated to all personnel and subcontractors under his/her control.</li> <li>• Carrying out the agreed rectification works after identification of non-conformance.</li> </ul>
Contractors & Event Staff	<p>Contractors and event staff have responsibilities to implement the EMP including:</p> <ul style="list-style-type: none"> <li>• Minimising their impact on the environment while undertaking works.</li> <li>• Implementing and maintaining environmental controls.</li> <li>• Report environmental incidents to the site supervisors.</li> </ul>

## 3.2 Training & Inductions

The key responsibilities for the implementation of the EMP will be included in the event induction. All event personnel will be aware of their environmental responsibilities as communicated through the site induction.

## 3.3 Environmental Records

The Project Manager is responsible for maintaining the following environmental records:

- This EMP and revisions
- Details of qualifications for individuals responsible for environmental monitoring
- Regulatory authority inspection reports
- Correspondence with regulatory authorities



- Environmental monitoring results
- Induction records
- Environmental inspection checklists (Appendix B, C and D)
- Waste quantity reports
- Environmental accidents / incidents / emergency reports
- Complaint reports

### 3.4 Environmental Incidents & Emergency Response

Incidents and near misses may occur that could potentially or actually cause environmental harm. Environmental management control procedures are established to minimise the risk of environmental harm occurring. In the event of an environmental incident, an incident report form or an approved equivalent must be completed and all remedial actions recorded.

The Project Manager shall notify the relevant authorities of any incident with actual or potential significant impacts on people or the biophysical environment as soon as practicable and within 24 hours after the occurrence of the incident.

#### 3.4.1 Emergency Contacts

Title / Agency	Contact Name	Contact Details
Project Manager	<i>George Spring</i>	0437 335 354
OEH Pollution Hotline	-	131 555
Emergency Services	<i>Fire &amp; Rescue NSW NSW Police NSW Ambulance Service</i>	000
Penrith City Council	-	4732 7777
Australian Wildlife Rescue Organisation (WIRES)		1300 094 737
Sydney Water		132 090

## 4. Implementation

### 4.1 Risk Assessment

The potential environmental risk has been assessed for each stage of the project against the risk assessment matrix outlined in Table 3. A description of the risk ratings is outlined in Table 4.

**Table 3 - Risk Assessment Matrix**

Likelihood	Consequence		
	Low	Medium	High
Will Occur	M	H	H
May Occur	L/M	M	H

Not Likely to Occur	L	L/M	M
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**Table 4 - Risk Ratings**

Rating	Description
L	<b>No environmental harm</b> - Does not cause actual environmental harm or damage to the environment.
L/M	<b>Unreasonable environmental harm</b> - Likely interference with an environmental value such that environmental nuisance may be caused.
M	<b>Moderate environmental harm</b> - Causes actual or potential harm to the environment which is manageable or reversible.
H	<b>Serious environmental harm</b> - Causes actual or potential harm to the environment which is widespread, or of a high impact or is irreversible.

**Table 5 - Risk Assessment**

Task	Soil & Water	Air Quality	Waste	Noise	Ecology
Demarcation and localised clearing of course route	H	L	L	L	H
Establishment of course obstacles involving earthworks and installation of obstacle structures	H	M	L/M	L	H
Installation of environmental controls	H	L	L	L	H
Establishment of support infrastructure (car parking, water and aid stations, base / assembly area)	H	L	L	L	H
Use of the course and support facilities by participants	H	L/M	M	M	M
Maintenance of course, environmental controls and support facilities	M	L	L/M	L	L
Dismantling obstacle structures and support facilities	H	L	M	L	L
Reinstating removed topsoil and subsoil	H	M	L	L	M
Removal of environmental controls	M	L	M	L	L
Rehabilitation of exposed surfaces	H	M	L	L	H



## **4.2 Management Controls**

All activities during the different stages of the event have been examined to determine their potential impacts on the environment. The risk rating is determined by considering the likelihood and consequence of an activity impacting upon an aspect of the environment.

Environmental management controls have been developed for implementation during the construction, operation and rehabilitation of the event to reduce the assigned risk ratings to acceptable levels. The controls have been tabulated and are included as appendices to this document:

- Appendix B details the management controls required for course construction and event preparation;
- Appendix C details the management controls required for undertaking the event;
- Appendix D details the management controls required for course dismantling and rehabilitation.

## **4.3 Environmental Control Maps**

Environmental Control Maps (ECMs) have been developed to provide a spatial overview of the site features and environmental management controls where appropriate, included as Appendix A. The ECMs should be reference during the construction, operation and rehabilitation of the event and in consultation with the management controls tables in Appendix B, C and D. The ECMs developed for this project are:

- Figure 1 – Property Details for Tough Mudder Fernhill
- Figure 2 – Native Vegetation Types and Temporary Fencing
- Figure 3 – Environmental Controls Map Overview
- Figure 4 – Environmental Controls Map Detail

## 5. Monitoring & Review

### 5.1 Monitoring

Monitoring the implementation of environmental mitigation measures is vital to ensure that these measures are effective, and to examine methods that may be employed to further improve the performance of the management control measures.

The Project Manager is responsible for monitoring the effectiveness of these measures, for making alterations to the deployment of these measures, for documenting these changes and reporting changes made to site supervisors and contractors.

#### 5.1.1 Water Quality Monitoring

The Project Approval requires pre and post-event water quality monitoring with a report to be prepared and issued to Council within 28 days of the event.

The pre-event monitoring will be undertaken in the week preceding the event, and post event monitoring will be undertaken in the week following the event. The report containing an interpretation of the water quality results and event impacts will be presented to Council after this date.

The methodology for assessing water quality impact is as follows:

- Sample above and below the Tough Mudders course on Littlefields Creek before and within 7 days after the event.
- Sample in the pond before and within 7 days after the event.
- Analyse samples for physico chemical parameters, suspended and total dissolved solids, and *E. coli*.
- Provide the Project Manager a brief interpretation of results prior to the event, where available, to pre-empt any risk to patrons.
- Provide interpretation of the results in a technical report for submission to Council within 28 days of the event. This report would focus on environmental water quality with respect to any short term, or long term impact resulting from the event.

Sample locations have been selected upstream on Littlefields Creek at the southern boundary of the property, downstream on Littlefields Creek at the eastern boundary of the property, in the large pond to be used during the event which is proximate to Littlefields Creek in the south eastern corner of the property, and on the unnamed creek exiting the eastern boundary of the property tributary to Mulgoa Creek. Water was available at all of these sampling locations for the pre-event sampling.

### 5.2 Inspection Checklists

The implementation and effectiveness of management control measures will be assessed weekly throughout the event. The Project Manager will be responsible for ensuring inspections are undertaken as required. The purpose of the checklist is to:

- Provide a surveillance tool to ensure environmental control measures are implemented;
- Identify problem areas for corrective action;

- Provide ongoing records of the EMP implementation.

The management control appendices (Appendix B, C and D) function as checklists to record the implementation of control measures and develop corrective actions if required. The ECMs (Appendix A) and Ecological Report (Appendix E) should be consulted during the preparation of inspection checklists.

### **5.3 Corrective Actions**

Corrective actions will be identified during the site inspections and recorded on the inspection checklist. Completed checklists will be provided to the project manager who will allocate resources to undertake the corrective actions.

Corrective actions for water quality will be discussed in the water quality report. Given the timing of water quality sampling; only information related to public health (*E. coli*, *enterococci* and cyanobacterial counts) will be available for the pond sample prior to the event. This information will be relayed to the project manager to inform participant risk associated with immersion in the pond.

### **5.4 Review & Improvement**

The EMP will be reviewed and updated as required throughout the event. Amendments to the EMP documents will be reviewed by the Project Manager.

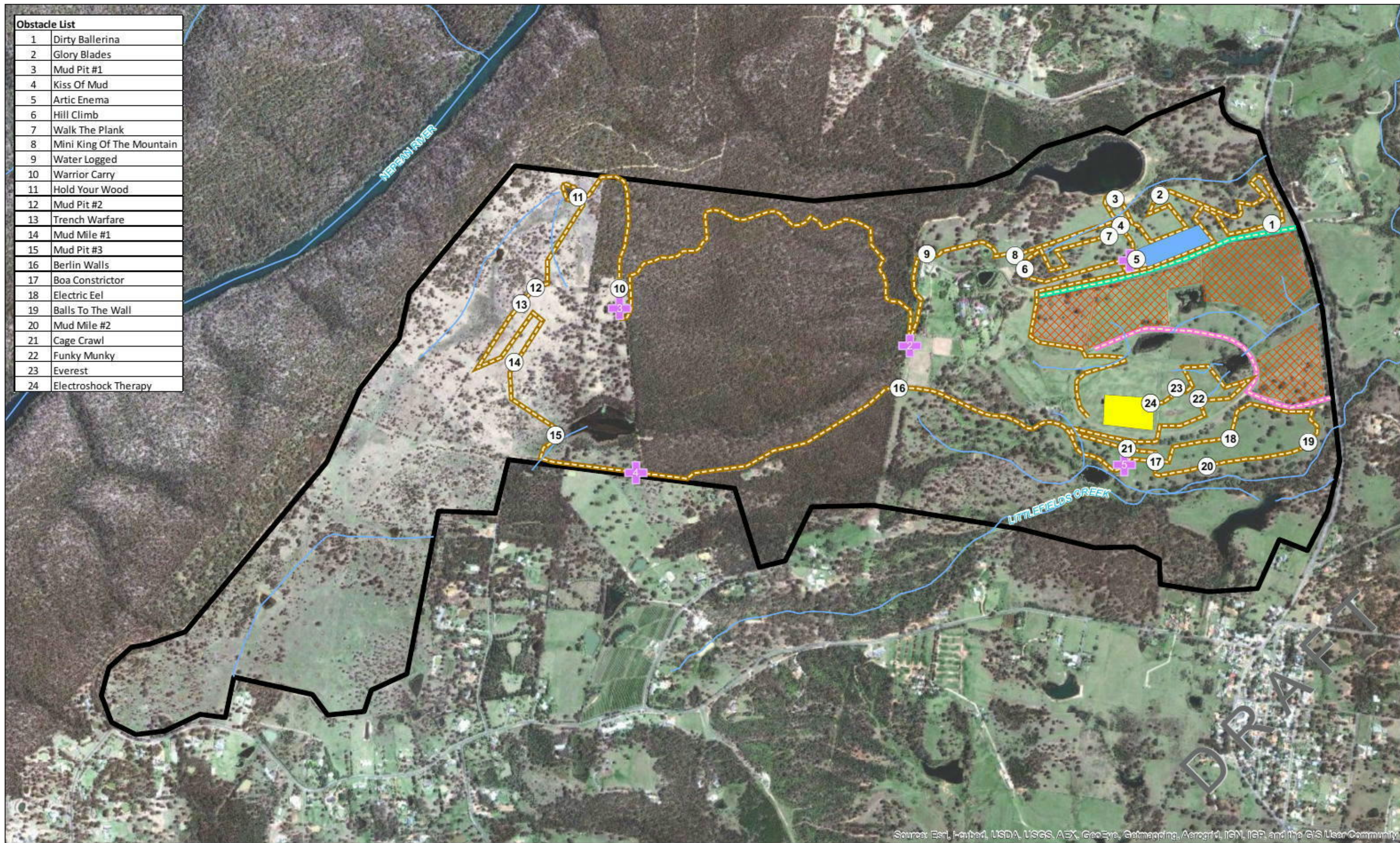


## Appendices

## Appendix A – Environmental Control Maps



Obstacle List	
1	Dirty Ballerina
2	Glory Blades
3	Mud Pit #1
4	Kiss Of Mud
5	Artic Enema
6	Hill Climb
7	Walk The Plank
8	Mini King Of The Mountain
9	Water Logged
10	Warrior Carry
11	Hold Your Wood
12	Mud Pit #2
13	Trench Warfare
14	Mud Mile #1
15	Mud Pit #3
16	Berlin Walls
17	Boa Constrictor
18	Electric Eel
19	Balls To The Wall
20	Mud Mile #2
21	Cage Crawl
22	Funky Munky
23	Everest
24	Electroshock Therapy



1:14,000 (at A3)  
0 50 100 200 300 400 500  
Metres



#### LEGEND

- Obstacles
- Base Area
- Camp Ground
- Water & Aid Station
- Course Route
- Egress Route
- Ingress Route
- Site Boundary
- Waterways
- Car Parks

Map Projection: Transverse Mercator  
Horizontal Datum: Geocentric Datum of Australia (GDA)  
Grid: Map Grid of Australia 1994, Zone 56



Tough Mudder  
Fern Hill Track

Job Number 22-16646  
Revision A  
Date 28 Aug 2013

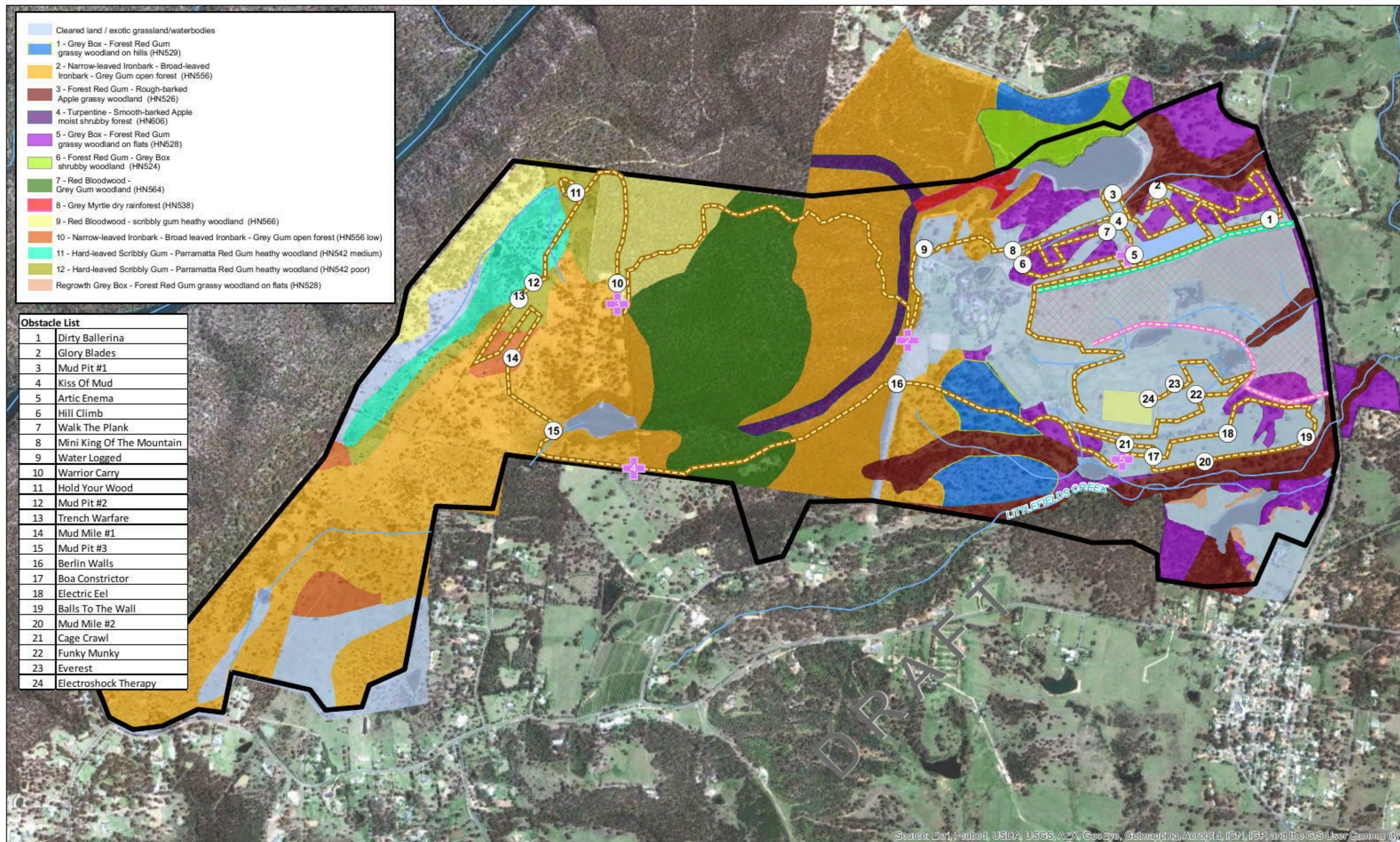
Property Details for  
Tough Mudder - Fern Hill

Figure 1

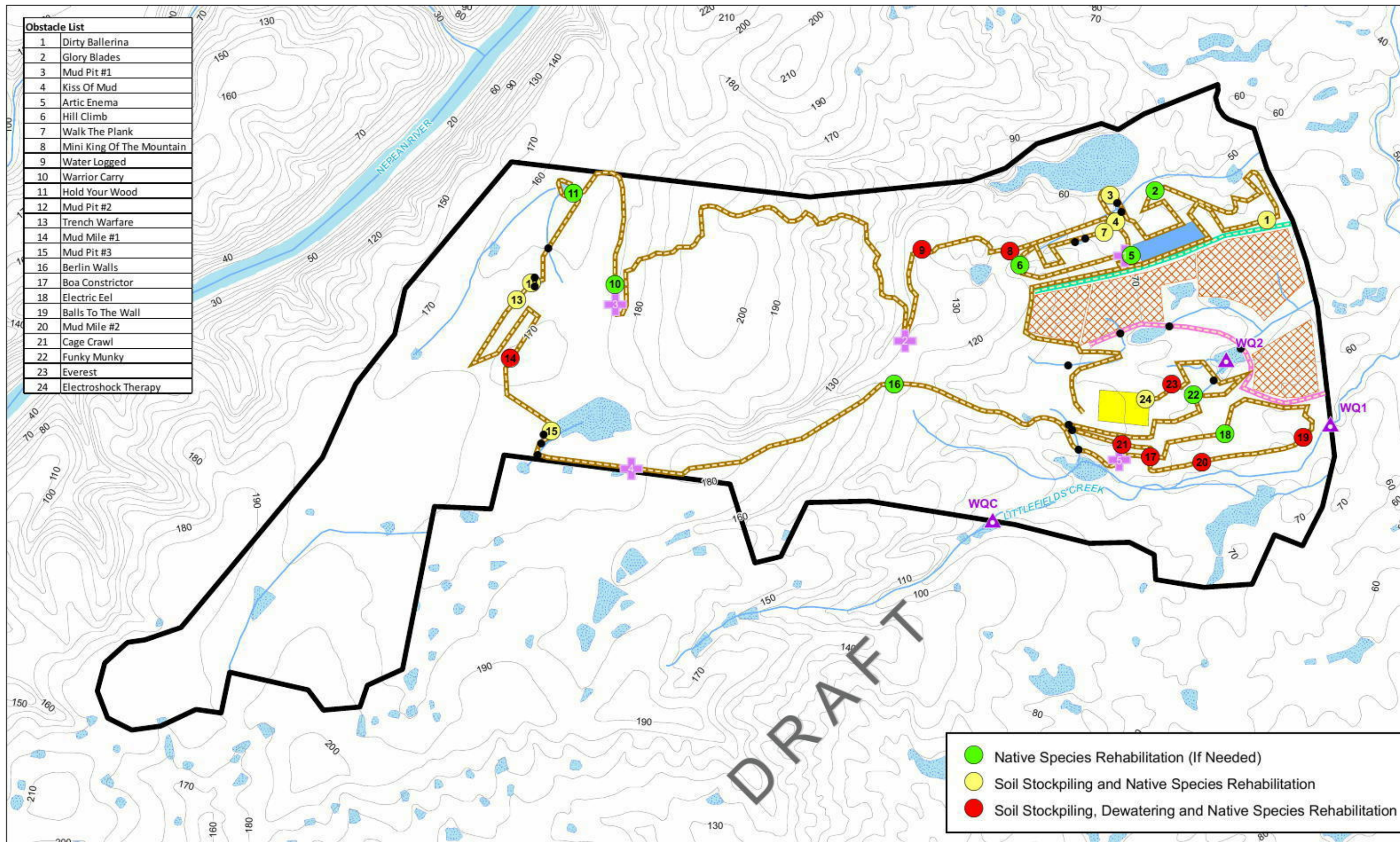
G:\22\16709\GIS\Map\2216646\_2001\_ToughMudder\_Course\_Obstacles\_20130809.mxd  
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Data Source: Geoscience Australia: 250k Data - Jan 2011; Tough Mudder: Course Route, Obstacles, Car Parking and Base Area; 2013; Google Earth Pro: Imagery, Accessed: Dec, 2012. Created by: mmorton

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1:14,000 (at A3)

0 50 100 200 300 400 500  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: Geocentric Datum of Australia (GDA)  
Grid: Map Grid of Australia 1994, Zone 56



**Legend**

- LocationOfPotentialBankProtection
- ▲ Water Quality Monitoring Points
- Waterways
- Contours (10 m)
- Course Route
- Egress Route
- Ingress Route
- Site Boundary



Tough Mudder  
Fern Hill Track

Environmental Controls  
Map - Overview

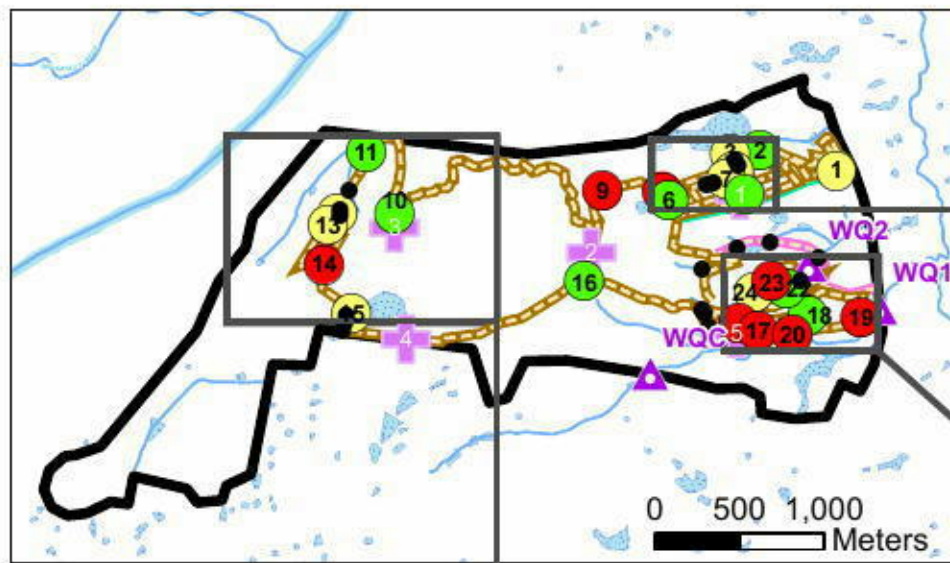
Job Number 22-16646  
Revision A  
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Figure 3

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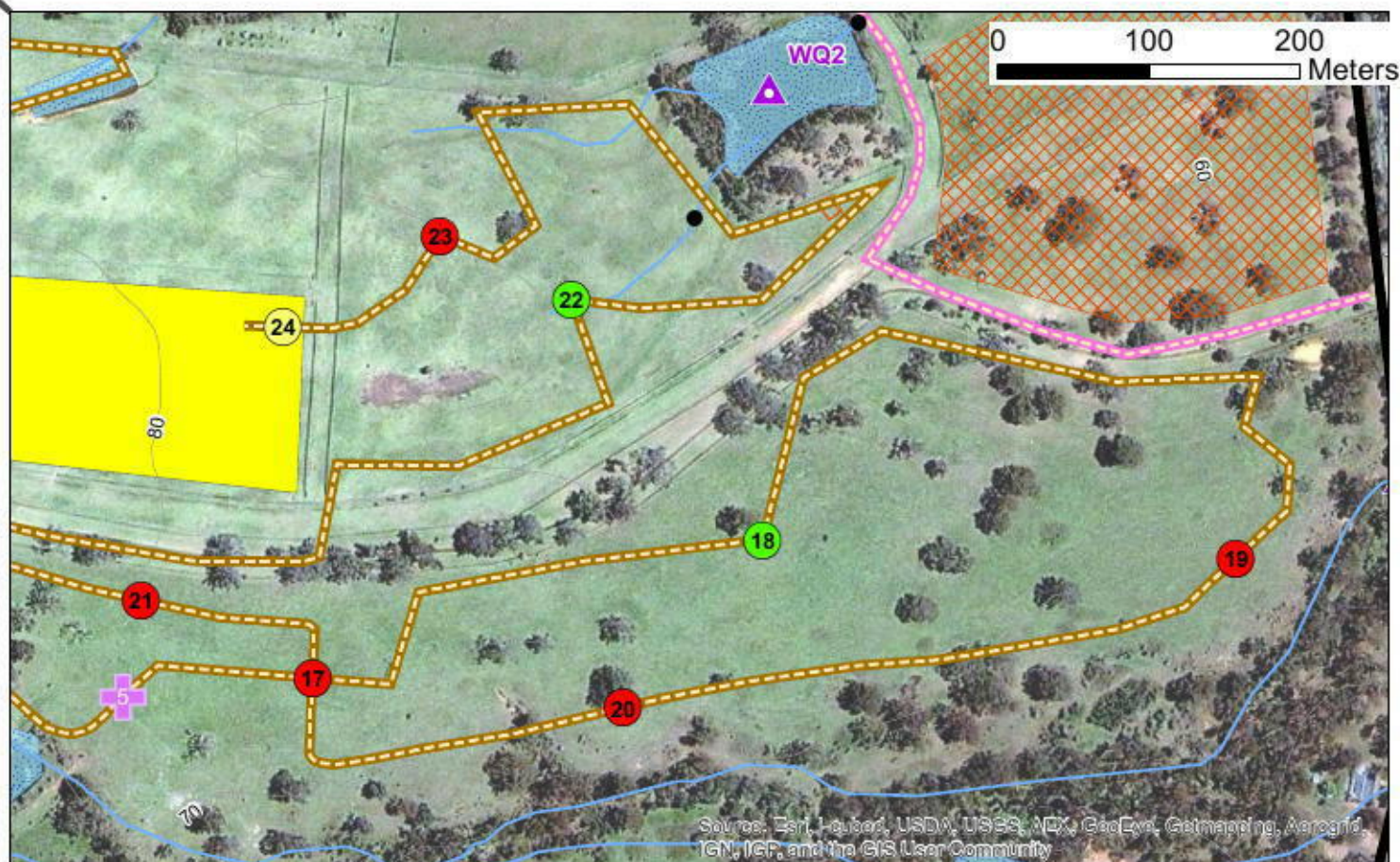
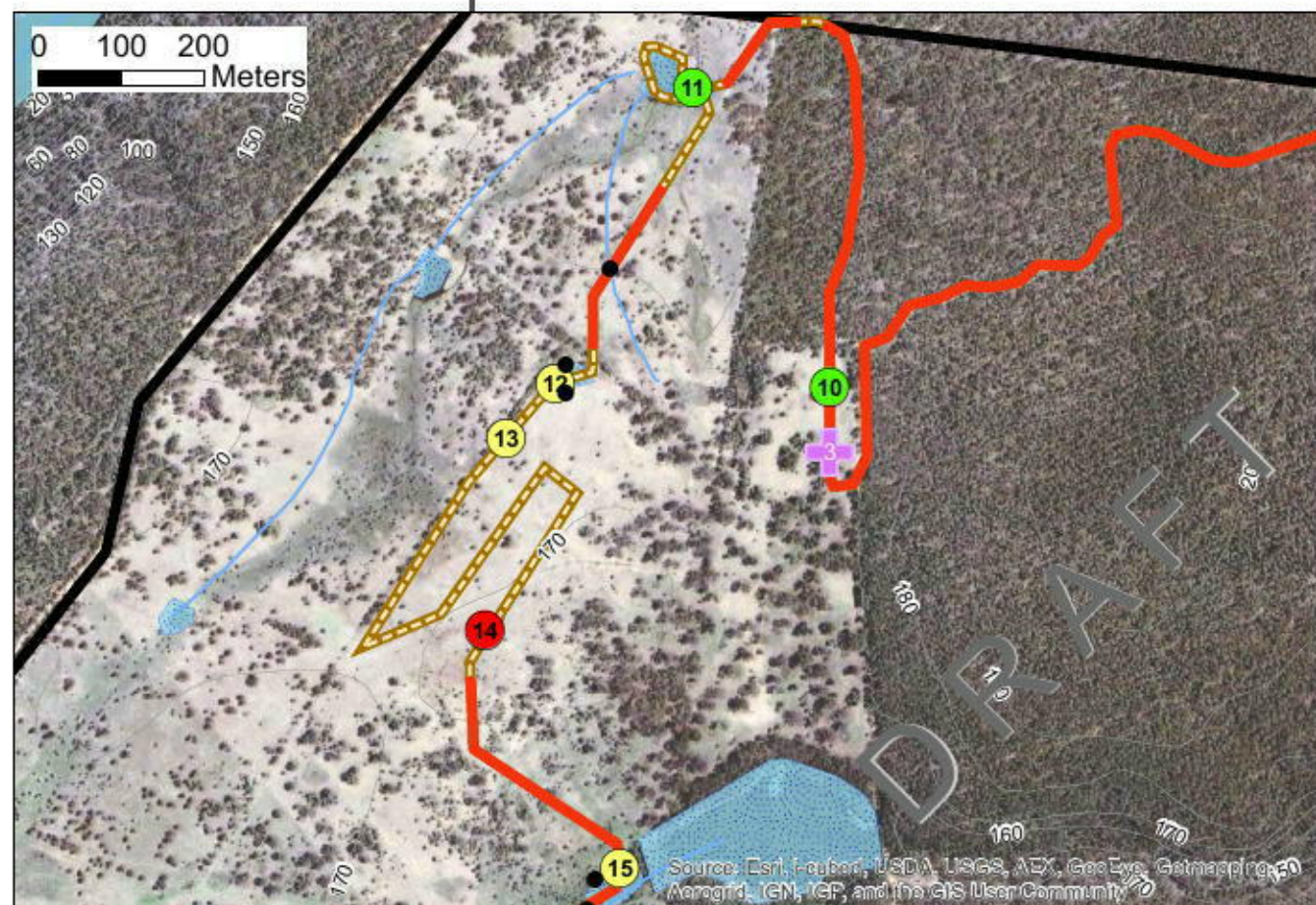
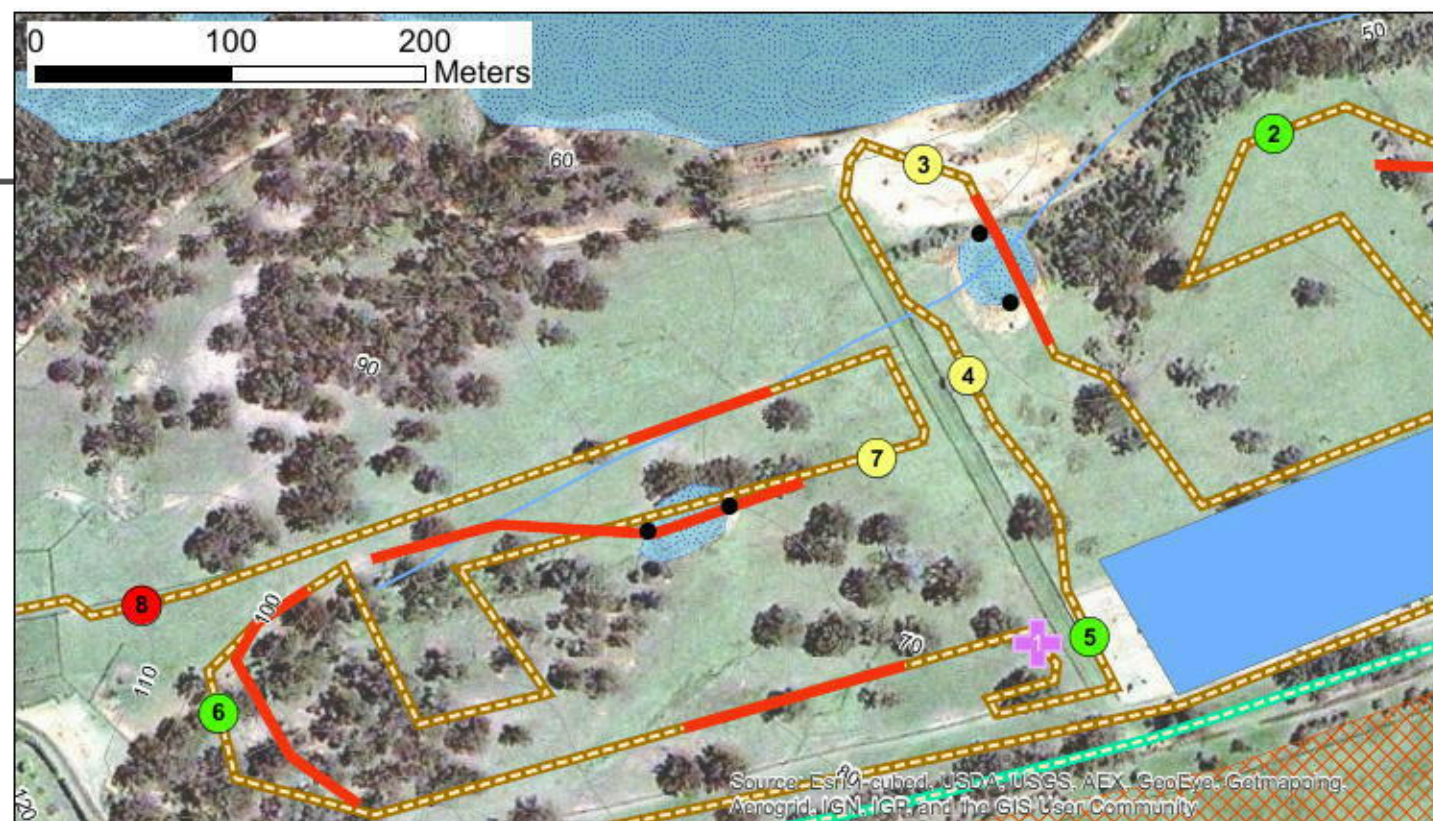
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13	Trench Warfare
14	Mud Mile #1
15	Mud Pit #3
16	Berlin Walls
17	Boa Constrictor
18	Electric Eel
19	Balls To The Wall
20	Mud Mile #2
21	Cage Crawl
22	Funky Munky
23	Everest
24	Electroshock Therapy

- Native Species Rehabilitation (If Needed)
- Soil Stockpiling and Native Species Rehabilitation
- Soil Stockpiling, Dewatering and Native Species Rehabilitation





## Appendix B – Construction Environmental Management Controls & Checklist

Category	Management Control	Date Completed	Corrective Action	Date Completed
Soil & Water	Erosion and sediment controls will be installed at the locations shown on the Environmental Control Maps (ECMs) (Figures 3 & 4).			
	Erosion and sediment control design and installation will be in accordance with The Blue Book - Managing Urban Stormwater (MUS): Soils and Construction (Landcom, 2006).			
	Removed topsoil and subsoil will be stockpiled separately in cleared areas away from waterways and waterbodies protected with sediment fencing or as shown on the ECMs (Figures 3 & 4).			
	Ingress and egress points of waterways will be protected with the installation of jute matting or equivalent level of protection at the locations identified on the ECMs (Figures 3 & 4).			
	Construction activities will be restricted during wet weather.			
	Undertake water quality monitoring at the locations shown on the ECMs during construction for assessment against the parameters outlined in Section 5.1.3			
Air Quality	Imported fill material will be covered during transport.			
	Stockpiled topsoil and subsoil will be covered with tarpaulins until required for rehabilitation.			
	Existing natural groundcover will be retained in carparks, access road and other trafficked areas.			

Category	Management Control	Date Completed	Corrective Action	Date Completed
	Exposed bare soils and surfaces will be wet down using a water cart if dust is being generated.			
Waste Management	Waste infrastructure as detailed in the Waste Management Plan (WMP) will be installed prior to the commencement of the event.			
	Toilets, waste receptacles and wastewater facilities will be located away from watercourses and waterbodies.			
	Construction waste will be removed from site before the commencement of the event.			
	Toilets and wastewater facilities are to be located in close proximity to the camping area in accordance with the requirements of the Australian Emergency Manual 12 – Safe and Healthy Mass Gatherings Chapter 5.			
Noise	The operation of plant, machinery, equipment and other significant noise sources will be within the hours of operation permitted under the <i>Protection of the Environment Operations (Noise Control) Regulation 2008</i> .			
	Background noise levels will be established via monitoring or existing data at receiver locations required by the Consent Conditions.			
Ecology	Temporary facilities, such as the obstacles and drinking stations, will be located in areas already disturbed and/or cleared.			
	No trees are to be removed for the track, base camp, parking, obstacles, emergency helicopter landing areas and camping area.			

Category	Management Control	Date Completed	Corrective Action	Date Completed
	Temporary fencing will be installed to delineate the track and restrict access into areas of native vegetation and to protect the vegetation edge, including the Structural Root Zones (SRZ) of retained, mature trees (Figure 2).			
	Where tents are to be installed close to patches of Endangered Ecological Communities (EEC), temporary fencing will be installed			
	Temporary fencing will be installed around the perimeter of the camping area.			
	A suitably qualified Ecological Consultant will be employed to supervise the location and installation of obstacles, water stations and track clearing, levelling, slashing and fencing to ensure that threatened species are avoided and the track and obstacles are micro-located to ensure absolute minimum impact of threatened species and communities.			
	Work staff will be provided with adequate equipment to clean machinery, tools and equipment to reduce the potential spread of weeds, pathogens and diseases.			



## Appendix C –Operations Environmental Management Controls & Checklist

Category	Management Control	Date Completed	Corrective Action	Date Completed
Soil & Water	Erosion and sediment controls will be monitored by site supervisors and repaired / relocated if required.			
Air Quality	Parking areas and access roads will be watered regularly if required.			
Waste Management	Waste will be managed in accordance with the WMP.			
	Waste and recycling bins will be regularly inspected and emptied by the waste contractor.			
	Wastewater generated by food businesses will be stored in a holding tank for disposal offsite at a licensed facility. Wastewater will not be released to the environment.			
Noise	Noise monitoring will be conducted at receiver locations required by the Consent Conditions in accordance with the requirements of the NSW EPA Industrial Noise Source Policy 2000 at least twice during daytime and twice during evening conditions.			
	Noise generated by PA systems and music will not exceed 5dB(a) above the background noise level.			
	Entertainment and trading including the operation of a PA and speaker system will cease operation at 7pm.			
	Food and beverage outlets servicing the camping area will cease trading at 9pm.			

Category	Management Control	Date Completed	Corrective Action	Date Completed
	In the event of recorded exceedances or community complaints site activities will be reviewed to minimise noise generation.			
Ecology	Install additional protection around vegetation that is being interfered with by event participants.			
	Immediately contact wildlife carers in the event of an injury / death of native animals.			

## Appendix D – Demobilisation and Rehabilitation Environmental Management Controls & Checklist

Category	Management Control	Date Completed	Corrective Action	Date Completed
Soil & Water	Where filtered wastewater is to be released to the environment, the release area should be of a suitable gradient with established groundcover and away from watercourses / waterbodies to allow infiltration.			
	Water released to the environment will be released in a controlled manner to prevent soil saturation, erosion or flooding.			
	Water released to the environment will be monitored against the water quality parameters as defined in the water quality monitoring program (Section 5.1.3).			
	Stockpiled subsoil and topsoil will be reinstated to its original location.			
	Reinstated topsoil will be scarified to facilitate groundcover establishment.			
	Rehabilitation measures will be implemented in accordance with the guidance provided on the ECMs (Figure 3 & 4).			
	Erosion and sediment controls including jute matting installed at the ingress and egress points of waterways will be removed for disposal at a licensed facility.			



Category	Management Control	Date Completed	Corrective Action	Date Completed
	Undertake water quality monitoring at the locations shown on the ECMs during rehabilitation (within 7 days of the event) for assessment against the parameters outlined in Section 5.1.3			
Air Quality	Exported material will be covered during transport.			
	Exposed bare soils and surfaces will be wet down using a water cart if dust is being generated.			
	Exposed surfaces will be rehabilitated as soon as practicable.			
Waste Management	Waste will be managed in accordance with the WMP.			
	Hay bales, logs and other materials used as part of the event will be disposed of at a licensed facility.			
	Litter resulting from the event will be collected and stored in waste receptacles for disposal.			
Noise	The operation of plant, machinery, equipment and other significant noise sources will be within the hours of operation permitted under the <i>Protection of the Environment Operations (Noise Control) Regulation 2008</i> .			
Ecology	All obstacle locations and disturbed areas that have experienced loss of ground cover or other vegetation as a result of the event will be rehabilitated using native seed (including when seed spraying) or plants suitable to the local community and is to be of local provenance (western Sydney) only.			

Category	Management Control	Date Completed	Corrective Action	Date Completed
	Immediately contact wildlife carers in the event of an injury / death of native animals.			

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