



DEPARTMENT OF
THE ENVIRONMENT,
CLIMATE CHANGE,
ENERGY AND WATER

Jason Julius
M2G Project Manager
PO Box 4218
Weston Creek, ACT 2611

**REQUESTED VARIATION TO
ENVIRONMENTAL AUTHORISATION 0802**

Dear Mr Julius,

The Environment Protection Authority (the Authority) received a variation request for Environmental Authorisation No: 0802 on 10 December 2010.

The requested variation was to amend the site area of the M2G Main Site Office Compound.

The Authority has considered the application and the reasons for the variation. Under Section 60 of the *Environment Protection Act 1997* the Authority has granted the variation in relation to the site area of the M2G Main Site Office Compound.

Please find the amended Environmental Authorisation 0802 attached.

The soil placement plan entitled M2G Topsoil Placement Plan – M2G Site Office, BWA-M2G-EN-SPP-001 22nd November 2010 submitted in accordance with Schedule 2, Table 8, condition 5 of Environmental Authorisation No: 802 is acceptable to the Authority.

If you wish to discuss this further please contact Jacqui Balazs on 6207 5925.

Yours sincerely

Daniel Walters
Environment Protection Authority

14 December 2010



DEPARTMENT OF
THE ENVIRONMENT,
CLIMATE CHANGE,
ENERGY AND WATER

Authorisation No. 0802

AUSTRALIAN CAPITAL TERRITORY

ENVIRONMENTAL AUTHORISATION UNDER THE ENVIRONMENT PROTECTION ACT 1997

**NOTE: This is a variation of the environmental authorisation dated
3 November 2010.**

The Environment Protection Authority (the Authority), pursuant to section 49(1)(a) of the *Environment Protection Act 1997* (the Act), hereby authorises:

Name:	John Holland Group Pty Ltd
ACN:	004 282 268
Address:	MOUNT STROMLO ROAD
Suburb:	MOUNT STROMLO
State:	ACT
Postcode:	2611
Postal:	PO Box 4128 MT STROMLO, ACT 2611

to conduct the following activity/activities:

- the extraction of material (other than water) from a waterway;
- the operation of equipment designed to extract more than 30, 000t per year of material (other than ground water) from land outside a waterway; and
- the acceptance of more than 100m³ of soil for placement on land by a lessee or occupier of the land if the land is in -
 - (a) an area identified in the territory plan as land in any of the following zones:
Broadacre; Rural; Hills, Ridges and Buffer Areas;
River Corridors; Mountains and Bushlands; or
 - (b) a plantation forestry precinct, within the meaning of the territory plan; or

- (c) an area identified in the national capital plan as any of the following:
Broadacre Areas; Rural Areas; Hills, Ridges and Buffer Spaces; River Corridors; Mountains and Bushland.

For the purpose of: **Construction of the Murrumbidgee to Googong Pipeline.**

On: Blocks: **119, 1470, 1471, 1572, 1611, 1654, 1675**

District: **Tuggeranong**

subject to the conditions set out in **Schedules 1 and 2**, attached, for an unlimited period or until earlier surrendered by John Holland Group Pty Ltd or cancelled or suspended by the Authority.

This is a standard environmental authorisation. This authorisation will be reviewed annually.


.....
Environment Protection Authority

Dated this **13th** day of **DECEMBER** 2010

SCHEDULE 1: GENERAL CONDITIONS

Definitions

Compliance point: The compliance points below refer to locations as indicated in Attachment A.

- 1) Private Residence (Block 1470, Tuggeranong).
- 2) Private Residence (Block 1675, Tuggeranong).
- 3) Private Residence (Block 108, Tennant).

Site: The area identified in the documents, Murrumbidgee to Googong Water Transfer Project, Sensitive Area Diagrams, Landholder Constraints – Maps 1 thru to 6 inclusive (Attachment B).

Virgin Excavated Natural Material (VENM): means excavated natural material (e.g. clay, gravel, sand, soil and rock) that is not mixed with any other waste and that;

- (a) has been excavated from areas that are not contaminated, as a result of industrial, commercial, mining or agricultural activities, with manufactured chemicals and that does not contain sulphidic ores or soils; or
- (b) consist of excavated natural materials that may be approved by the Authority.

Waterway: means—

- (1)
 - (a) a river, creek, stream or other natural channel in which water flows (whether continuously or intermittently); or
 - (b) the stormwater system or any other channel formed (whether completely or partly) by altering or relocating a waterway mentioned in paragraph (a); or
 - (c) a lake, pond, lagoon or marsh (whether formed by geomorphic processes or by works) in which water collects (whether continuously or intermittently).
- (2) **Waterway** includes—
 - (a) the bed that the water in the waterway normally flows over or is covered by; and
 - (b) the banks that the water in the waterway normally flows between or is contained by.

1. Compliance with Environmental Authorisation

The Authorisation holder shall:

- a) comply with any authorisation condition immediately where no time for compliance is stated; and
- b) notify the Authority in writing within 2 working days of becoming aware of;

- i any event that causes, or is likely to cause, any authorisation condition to be exceeded; or
- ii any monitoring data that show that a condition of the authorisation has been exceeded.

2 Activities must be carried out to protect the environment

- 2.1 All activities carried out on the site shall be carried out in such a manner that adverse impact on the environment is minimised.

3 Maintenance of plant and equipment

- 3.1 All plant and equipment installed or used in or on the site shall be maintained in a safe and good condition and in accordance with manufacturer's recommendations.
- 3.2 Records of all maintenance and repairs performed on pollution control equipment including drainage systems, interceptors, separators and infrastructure shall be kept on site for a period of 2 years and made available to the Authority on request.

"plant and equipment" includes drainage systems, infrastructure and pollution control equipment.

4 Environmental Practices

- 4.1 The Authorisation holder shall minimise emissions to the environment by:
 - (a) adopting the practises set out in **Schedule 2**.

5 Compliance with Australian Standards, Industry Codes of Practice and Policies

- 5.1 The Authorisation holder shall comply with the provisions of the following Australian Standards, Guidelines, Industry Codes of Practice and Policies provided such provisions are not in conflict with the conditions in this Authorisation, and the provisions of any policies made by the Authority.

- AS 1940 - The Storage and Handling of Flammable and Combustible Liquids, Standards Association of Australia.
- AS 2187.2-2006 Explosives – Storage and use – Use of explosives
- AS 4282-1997 Control of the obtrusive effects of outdoor lighting
- AS 2436–1981 Guide to noise control on construction, maintenance and demolition sites.
- AS/NZS 5667.1-1998 Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.

- Environment Protection Guidelines for Construction and Land Development in the ACT, August 2007.
- Environment Protection Policies prepared under the *Environment Protection Act 1997*.
- ACT Code of Forest Practice, Version 1, August 2005.

6 Fuel Storage

- 6.1 Where there are fuel storage tanks on the site the Authorisation holder shall ensure the tanks and associated pipe work are maintained in good condition. The proposed method of demonstrating the integrity of the tanks and associated pipe should be incorporated into the Authorisation holders Environment Management Plan required under section 17 of this schedule.
- 6.2 Further to the provisions of section 6.1, special requirements are applied to the abandonment of any aboveground or underground tanks and should the need arise, the Authorisation holder agrees to contact the Authority and:

Office of Regulatory Services

Dangerous Substances and Workers' Compensation

Telephone: 02 6205 0200

Facsimile: 02 6205 0336

Block B, Level 3

Callam Offices

Easty Street

WODEN ACT 2606

(GPO Box 158, CANBERRA ACT 2601)

7 Reporting of environmental harm

- 7.1 In the event that an incident has caused, is causing or is likely to cause material or serious environmental harm, whether the harm occurs on or off the site, the Authorisation holder, their employee or agent shall report the incident to the Authority immediately after it becomes known to the Authorisation holder or to their employee or agent in accordance with clause 7.2.
- 7.2 The incident shall be reported to the Authority by telephoning Canberra Connect on 132281 during and outside business hours.
- 7.3 The Authorisation holder shall notify the Authority in accordance with clause 7.2 immediately after becoming aware that land is contaminated in such a way as to present, or to be likely to present –
- a) a significant risk of harm to human health; or
 - b) a risk of material environmental harm or serious environmental harm.
- 7.4 The Authorisation holder, their employee or agent shall also report an incident referred to in clause 7.1 and/or clause 7.3, in writing to the Authority within 2 working days of the incident occurring or becoming aware of contamination of land. The report must include:

- c) incident or activity that has caused contamination or environmental harm;
- d) nature of contamination and chemicals of concern;
- e) area affected (on or off site);
- f) aspects of the environment affected; and
- g) any other relevant information.

7.5 The Authorisation holder shall keep a record of all other incidents in relation to pollution from, or on, the site. These records are to be provided, on request, to the Authority

8 Record of pollution complaints

8.1 The Authorisation holder shall keep a legible record of all complaints received by its employees or its agents, in relation to pollution associated with activities on the site. This record is to be provided, on request, to the Authority and must be kept for a period of 5 years.

9 Record of activity levels

9.1 The Authorisation holder shall maintain the following records for a period of 2 years:

- a) material extracted from a waterway (except water) in tonnes;
- b) material extracted from land outside of a waterway in tonnes; and
- c) virgin excavated natural material (VENM) accepted for placement in accordance with Schedule 2, Table 8.

10 Records to be maintained

10.1 The following records will be maintained and kept by the Authorisation holder for a period of five years:

- a) field sampling record sheets and chain-of-custody forms;
- b) results of monitoring of soils and groundwater;
- c) reconciliation records for all fuels, oils and hazardous materials and wastes utilised and stored on site; and
- d) waste disposal certificates for any hazardous wastes disposed off-site.

11 Responsible employees

11.1 The Authorisation holder shall authorise at least two senior employees or agents:

- a) to speak on behalf of the Authorisation holder; and

b) to provide any information or document required under this Authorisation.

11.2 The Authorisation holder shall inform the Authority of the names and telephone numbers (including after hours numbers) of those persons within five (5) working days of this Authorisation coming into force. The details may be provided by facsimile to (02) 6207 6084 or email to Environment.Protection@act.gov.au.

11.3 The Authorisation holder shall inform the Authority of any change in the information provided under clause 11.2 within five (5) working days of the change. The details may be provided by facsimile to (02) 6207 6084 or email to Environment.Protection@act.gov.au.

11.4 Any person nominated by the Authorisation holder to meet the requirements of clause 11.2 shall be readily contactable on the person's nominated telephone numbers.

12 Authorisation shall be kept on site

12.1 A copy of this Authorisation shall be kept at the site and shall be available for inspection by any employee or agent of the Authorisation holder working at the site.

13 Waste

13.1 No waste material is to be incinerated on site.

13.2 The Authorisation holder shall use licensed waste transporters to transport "controlled/regulated wastes" as defined in the *Environment Protection Act 1997* and the Environment Protection Regulation 2005. Information on Controlled Waste handling and transport can be obtained from the Authority on 13 22 81.

13.3 The Authorisation holder shall ensure excess spoil and other waste material removed from the site is in accordance with Schedule 2, Table 7.

14 Hazardous Materials

14.1 The Authorisation holder shall store and manage hazardous materials in a manner that prevents adverse impacts on the environment. The handling and storage of hazardous materials should be addressed in the Environment Management Plan required under section 17 of this Schedule.

15 Discharge of stormwater

15.1 Discharges from the site are only permitted from sediment control ponds in accordance with Schedule 2, Table 3.

16 New designs and innovations

16.1 The provisions of this Authorisation are not intended to limit the appropriate use of alternative materials, equipment, designs, or methods because they are not included.

17 Environment Management Plan

17.1 The Authorisation holder shall prepare and submit Environment Management Plans (EMP's) acceptable to the Authority prior to the commencement of each phase of the project.

17.2 The EMP's should identify all activities that may have an adverse impact on the environment or the potential to cause environmental harm, and detail the mechanisms employed to prevent or minimise the impact of these activities.

17.3 The EMP's, once accepted by the Authority are to be implemented. They will also form the basis for future authorisation conditions and environmental improvements.

17.4 Where a variation to the mechanisms employed to prevent or minimise the adverse environmental impacts of the activity or the way in which the activity is carried out as detailed in the endorsed EMP's is proposed, the Authorisation holder must seek endorsement from the Authority for the variation. A revised EMP acceptable to the Authority must be submitted within 3 months of the endorsement of the variation.

18 Monitoring Requirements

18.1 Air Monitoring

- a) Air monitoring on the site shall be carried out in accordance with Schedule 2, Table 1, Condition 1.

18.2 Surface Water Monitoring

- a) Water quality in the Murrumbidgee River shall be monitored daily during the construction of the low lift pump, hi lift pump and associated infrastructure for the parameters set out in Schedule 2, Table 2, Condition 1.

18.3 Noise Monitoring

- a) Noise monitoring shall be carried out in accordance with Schedule 2, Table 4, Conditions 2 - 4.

18.4 Blasting Monitoring

- a) Blasting on the site shall be monitored in accordance with Schedule 2, Table 5, Conditions 4 and 5.

19 Water Quality Standards

19.1 Water quality of all sediment control ponds shall be managed with the object of being within the limits for the parameters listed at Schedule 2, Table 3, Condition 3.

20 Reporting Requirements

20.1 A weekly report, or other period agreed by the Authority, on compliance with all conditions of the Authorisation is to be provided to the Authority on the Monday of the following week. The report will include but is not limited to:

- a) Air monitoring results;
- b) Water monitoring results;
- c) Noise monitoring results;
- d) Blasting monitoring results;
- e) Controlled discharges from sediment control ponds; and
- f) Weekly field inspection results of all controls used in the management of pollutants to the environment.

20.2 Monitoring results are to be provided, on request, to the Authority.

20.3 Where the Nephelometric Turbidity Units (NTU) at location 2 in Schedule 2 Table 2, Condition 1 is greater than 10NTU to that at location 1, the Authority must be notified as detailed in Section 7.

21 Sampling Requirements

21.1 Clauses 21.2 and 21.3 do not apply to the sampling and analysis of noise.

21.2 All sample collection, analysis and associated paperwork under this Authorisation shall be conducted in accordance with Australian Standard/New Zealand Standard 5667.1:1998, "*Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*", and with the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1989, or other standards and methods agreed to by the Authority.

21.3 The sample collection shall be undertaken and documented by a suitably qualified person in accordance with clause 21.1. All required documentation shall be countersigned by a person authorised under clause 11.1 and shall be made available for inspection by the Authority. Sample analysis of parameters shall be conducted by a person employed as an analyst in any of the following organisations:

- (a) a Government laboratory;
- (b) an Australian university;

- (c) a laboratory where Authorisation parameters are accredited by the National Association of Testing Authorities; or
- (d) a laboratory approved by the Authority.

21.4 Clause 21.3 does not apply to the analysis of pH and turbidity.

SCHEDULE 2

TABLE 1: AIR POLLUTION

Requirement	
1	Visual monitoring of dust and exhausts shall be undertaken at all times, and where visible dust emissions occur, the Authorisation holder shall identify and implement all practicable dust mitigation measures.
2	The Authorisation holder shall ensure that dust emissions from the site are minimised, including wind blown and traffic generated dust.
3	A water cart or alternative methods as approved by the Authority shall be used on site to suppress dust.
4	Water or alternative methods as approved by the Authority shall be applied to stock piles, work areas and unsealed roads.
5	Water application rates shall be aligned with the prevailing climatic conditions, particularly temperature, rainfall and wind speed/direction.
6	Disturbed areas shall be stabilised and revegetated as soon as possible to minimise exposure times of bare earth.
7	All sealed roads shall be swept of dust at regular intervals, including public roads where there is evidence of material deposition related to the works.
8	Working in extremely dry windy conditions shall be avoided.
9	The transportation of all materials and substances used to carry out the activity shall be covered during movements to and from the site.

TABLE 2: WATER POLLUTION

Requirement	
1	<p>Water quality in the Murrumbidgee River shall be monitored for turbidity.</p> <p>A water sample is to be taken daily during the construction of the low lift pump, hi lift pump and associated infrastructure from two locations:</p> <ol style="list-style-type: none">1) Upstream approximately 50 metres from the area of construction; and2) Downstream approximately 50 metres from the area of construction. <p>Both samples are to be analysed for turbidity. A Turbidity Tube may be used and the Nephelometric Turbidity Units (NTU's) are to be recorded.</p>
2	<p>The Authorisation holder shall manage the water catchments on the site so that pollutants and sediments are detained on site in accordance with an approved Environmental Management Plan (EMP).</p>
3	<p>The Authorisation holder shall ensure all clear and uncontaminated stormwater does not enter sediment control ponds.</p>
4	<p>The Authorisation holder shall ensure no fuels or oils are kept within a Riparian Management Zone and/or Exclusion Zone as defined in the ACT Forest Code of Practice, Version 1, August 2005.</p>
5	<p>The Authorisation holder shall ensure no machinery is serviced or refuelled in a Riparian Management Zone and/or Exclusion Zone as defined in the ACT Forest Code of Practice, Version 1, August 2005.</p>
6	<p>The Authorisation holder shall ensure that sediment control ponds;</p> <ol style="list-style-type: none">a) are constructed in accordance with the Environment Protection Guidelines for Construction and Land Development in the ACT (August 2007);b) are discharged where the water level is above 20% capacity;c) are discharged in accordance with Table 3; andd) have the sediment build up removed when the sediment reaches 10% capacity of the pond.

TABLE 3: CONTROLLED DISCHARGES

Requirement									
1	The Authorisation holder shall record all discharges from sediment control ponds. These records are to be provided, on request, to the Authority.								
2	The Authorisation holder shall ensure that no discharge from a sediment control pond causes erosion of the channels or banks leading to a waterway.								
3	<p>Discharges from the sediment control ponds are only permitted when the water quality meets the standards detailed below for pH and turbidity or suspended solids.</p> <p>Water Quality Standards</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Criteria</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>6.5 – 8.5</td> </tr> <tr> <td>Suspended solids</td> <td><25mg/L</td> </tr> <tr> <td>Turbidity</td> <td><10 NTU</td> </tr> </tbody> </table>	Parameter	Criteria	pH	6.5 – 8.5	Suspended solids	<25mg/L	Turbidity	<10 NTU
Parameter	Criteria								
pH	6.5 – 8.5								
Suspended solids	<25mg/L								
Turbidity	<10 NTU								

TABLE 4: NOISE POLLUTION

Requirement	
1	<p>Operations at the site shall be managed to ensure noise levels do not exceed the following levels at any of the compliance points.</p> <p>Mon – Saturday 7 am to 6pm 60dB(A) 6pm to 10pm 45dB(A) 10pm to 7am 35dB(A)</p> <p>Sunday and Public Holidays 8 am to 10pm 45dB(A) 10pm to 8am 35dB(A)</p>
2	<p>For the purpose of assessment of noise limits, noise from the activities shall be measured at the most affected point within the residential boundary of the compliance point or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the residential boundary.</p>
3	<p>For the purpose of assessment, monitoring shall be carried out in accordance with the Environment Protection Regulation 2005 by a competent person who has obtained noise measurement qualifications from an Australian University, registered training organisation or qualifications acceptable to the Authority.</p>
4	<p>Construction noise levels shall be monitored at each compliance point during the following periods:</p> <ol style="list-style-type: none"> 1) 7am to 6pm once a week on alternative days whilst work is being carried out within 1000 metres of a compliance point; 2) 6pm to 10pm* daily, or time period and frequency agreed to by the Authority; and 3) 10pm to 7am* daily, or time period and frequency agreed to by the Authority.
5	<p>Compliance points 1 – 3 detailed in Schedule 1 are only considered compliance points for noise where there is a permanent resident.</p>

*Not required where works have ceased.

TABLE 5: BLASTING

Requirement	
1	Blasting on the site is only permitted between the hours of 8 am to 5 pm Monday to Friday, excluding Public Holidays.
2	The airblast overpressure level from blasting operations in or on the site shall not exceed the following at any point at the compliance points detailed in Schedule 1: 1) 120dB (Linear Peak) for any blast; and 2) 115dB (Linear Peak) for 9 out of any 10 consecutive blasts initiated regardless of the interval between blasts.
3	The ground vibration peak particle velocity from blasting operations carried out in or on the premises shall not exceed the following at any point at the compliance points detailed in Schedule 1: 1) 10 mm/s for any blast; and 2) a peak particle velocity of 5 mm/s for 9 out of any 10 consecutive blasts initiated regardless of the interval between blasts.
4	For the purposes of assessment, monitoring shall be carried out by a person or body possessing appropriate qualifications and experience to perform the required measurements and in accordance with Australian Standard AS 2187.2-2006 <i>Explosives – Storage and use – Use of explosives</i> .
5	For the purpose of assessment, monitoring shall be carried out for each blasting operation.

TABLE 6: LIGHT POLLUTION

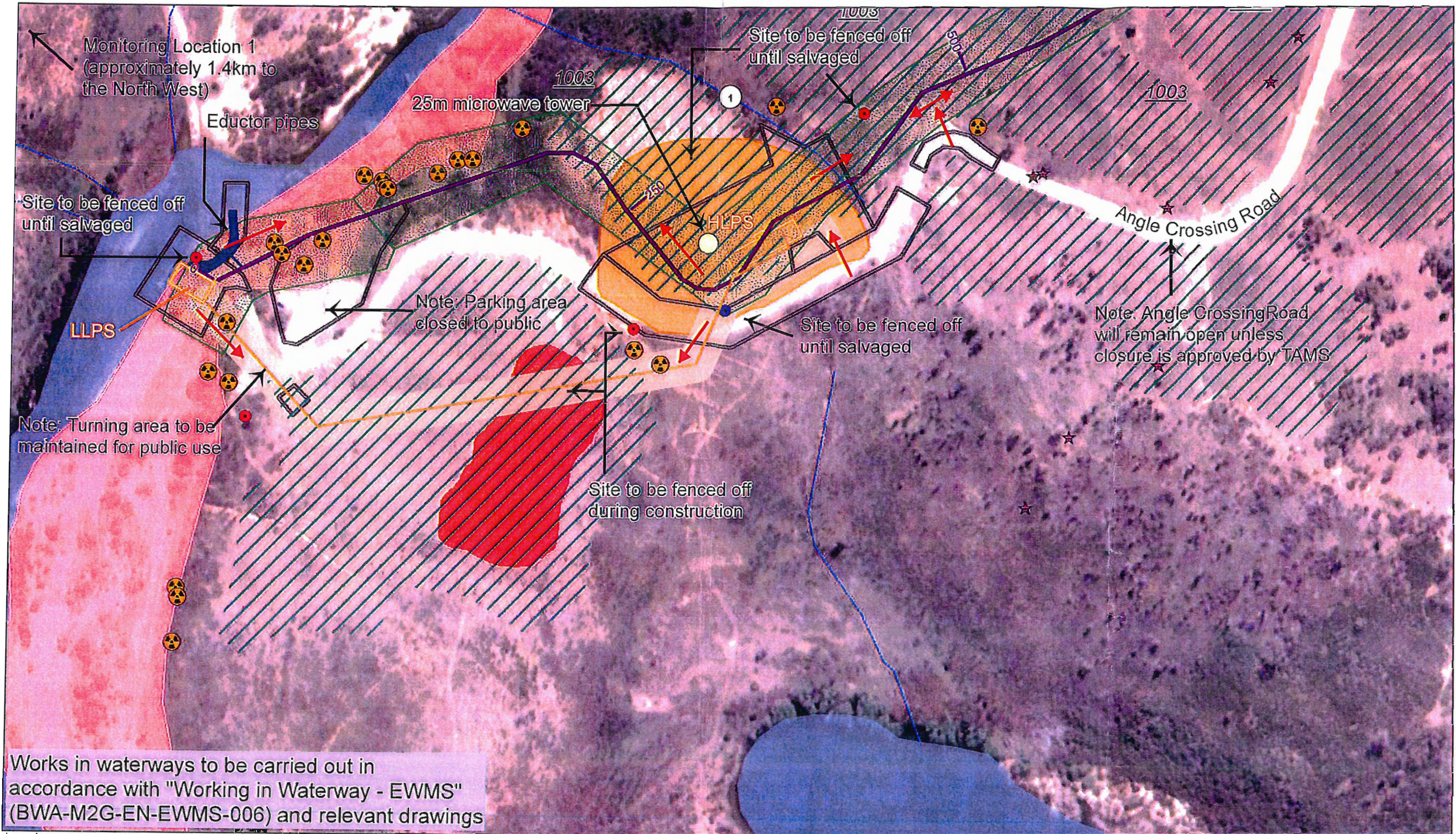
Requirement	
1	The operations at the site shall be managed to ensure the sighting and aiming of outdoor lighting from the activities is in accordance with AS 4282-1997 and does not cause an environmental nuisance at a compliance point detailed in Schedule 1.

TABLE 7: WASTE MANAGEMENT

Requirement	
1	The Authorisation holder shall not dispose of excess spoil at a place other than that which is approved by the Authority.
2	Records of spoil removed from the site shall be kept by the Authorisation holder for a period of 2 years and made available to the Authority on request. These records are to include: a) quantity of spoil removed from the site; b) location of disposal;
3	The Authorisation holder shall ensure all other waste material removed from the site is directed to a waste management facility lawfully permitted to accept that material.

TABLE 8: SOIL PLACEMENT

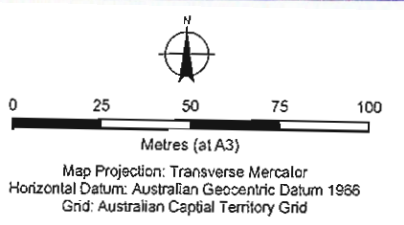
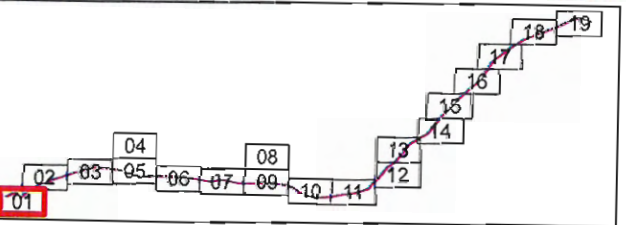
Requirement	
1	All material used is to be Virgin Excavated Natural Material (VENM). If signs of contamination are detected the Authorisation holder must cease accepting soil immediately and notify the Authority.
2	The supplier of material is to provide written certification that the material is VENM and not contaminated prior to acceptance by the Authorisation holder.
3	Records of all fill obtained shall be kept by the Authorisation holder for a period of 2 years and made available to the Authority on request. These records are to include: a) Source of material; b) Type of material; c) Quantity of material; and d) Who delivered the material.
4	All VENM material accepted for placement on the site shall only be placed within the area defined as the site in Schedule 1.
5	The Authorisation holder shall prepare a soil placement plan acceptable to the Authority prior to the acceptance of VENM for placement. The soil placement plan shall detail the following: a) Natural ground level; b) Proposed finished level; c) Stabilisation and/or remediation; and d) Maintenance.



Legend

Monitoring Location	Fenced Work Compounds & Laydown Areas	Pre-clearance survey data	Land owner constraint/feature	Surface Aboriginal Artefacts	Anthropodium fimbriatus	Lotus australis	Swainsona sericea	Jacky Winter	Southern Whiteface	Historical (European) Recording	Construction Corridor Width
Electrical Transmission Line	Pipeline Structures	Hollow Bearing Trees	Be Aware of "XYZ"	Historical (European) Recording	Discaria pubescens	Microseris lanceolata	Zornia dyctiocarpa	Large-footed Myotis	Speckled Warbler	Surface Artefacts and PAD	15m
New Electrical Alignment	Cadastral Boundary	Pink Tail Worm Lizard	Farm dam	Previous Cultural Heritage Recording	Leucochrysum albicans var. tricolor	Pterostylis sp.	Diamond Firetail	Pink-tailed Worm Lizard	Nominal TSC	Surface Aboriginal Artefacts and PAD	20m
River/Creek	New Electrical Easement	Swainsonia Recta	Driveway	New Navin Data (TBC)	Linum marginale	Swainsona recta	Eastern Bentwing-bat	Restless Flycatcher	TSC	Potential Archaeological Deposits (PAD)	25m
Pipeline Alignment	Waterbody	Wombat Burrow	Tree to be preserved			Gang-gang Cockatoo	Scarlet Robin	White-winged Triller			30m
		Linear feature/structure	Yellow box								35m
											40m

Vehicle access and movement direction



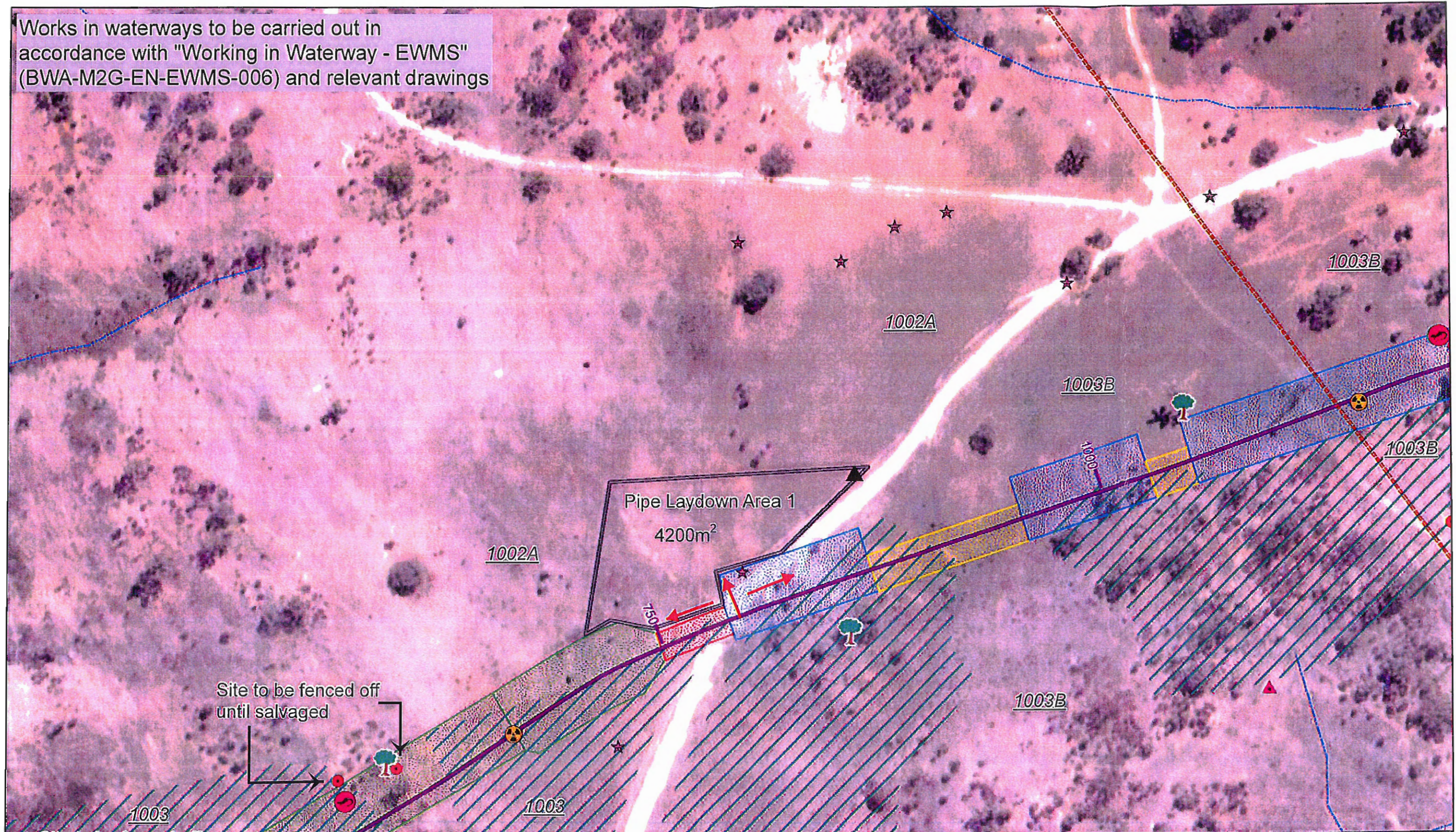
BULK WATER ALLIANCE



Murrumbidgee to Googong Water Transfer Project
 Sensitive Area Diagrams
 Landholder Constraints
 Map 01 of 186

Project Reference: GHD_M2G_GEN_EN_SAD_001_A_3
 Revision: E
 Date: 28 Oct 2010
 Peer review:
 Technical review:

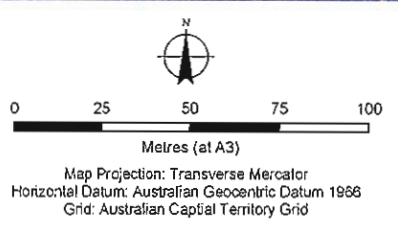
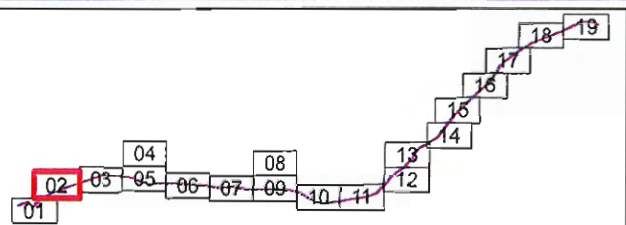
Works in waterways to be carried out in accordance with "Working in Waterway - EWMS" (BWA-M2G-EN-EWMS-006) and relevant drawings



Legend

Monitoring Location	Fenced Work Compounds & Laydown Areas	Pre-clearance survey data	Land owner constraint/feature	Surface Aboriginal Artefacts	Arthropodium fimbriatus	Lotus australis	Swainsona sericea	Jacky Winter	Southern Whiteface	EPBC/NC	Historical (European) Recording	Construction Corridor Width
Electrical Transmission Line	Pipeline Structures	Hollow Bearing Tree	Be Aware of "XYZ"	Historical (European) Recording	Discaria pubescens	Microseris lanceolata	Zornia dactylocarpa	Large-footed Myotis	Spotted Warbler	EPBC/TSC	Surface Artefacts and PAD	15m
New Electrical Alignment	Cadastral Boundary	Pink Tailed Worm Lizard	Farm dam	Previous Cultural Heritage Recording	Leucodrymonia albicans var. tricolor	Pterostylis sp.	Diamond Finetail	Pink-tailed Worm Lizard	Varied Sitella	Nominal TSC	Surface Aboriginal Artefacts and PAD	20m
River/Creek	New Electrical Easement	Swainsona Reeds	Driveway	New Navin Data (TBC)	Linum marginata	Swainsona recta	Eastern Bent-wing-bat	Restless Flycatcher	White-winged Tiller	TSC	Potential Archeological Deposits (PAD)	25m
Pipeline Alignment	Waterbody	Wombat Burrow	Tree to be preserved				Gang-gang Cockatoo	Scarlet Robin				30m
		Linear feature/structure	Yellow box									35m
												40m

Vehicle access and movement direction



BULK WATER ALLIANCE

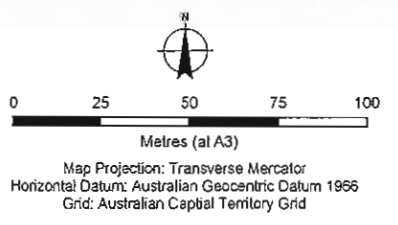
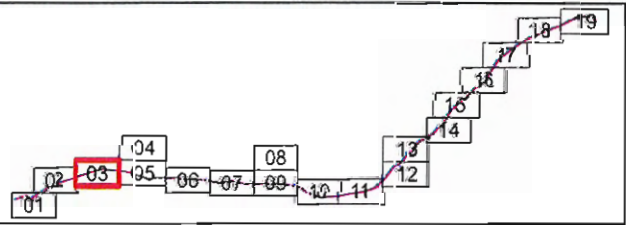
Murrumbidgee to Googong Water Transfer Project
 Sensitive Area Diagrams
 Landholder Constraints
 Map 02 of 196

Project Reference: GHD_M2G_GEN_EN_SAD_001_A_3
 Revision: E
 Date: 28 Oct 2010
 Peer review:
 Technical review:

Works in waterways to be carried out in accordance with "Working in Waterway - EWMS" (BWA-M2G-EN-EWMS-006) and relevant drawings



Legend		Pre-clearance survey data		Land owner constraint/feature		Surface Aboriginal Artefacts		Historical (European) Recording		Construction Corridor Width	
● Monitoring Location	▭ Fenced Work Compounds & Laydown Areas	● Hollow Bearing Tree	● Be Aware of "XYZ"	● Surface Aboriginal Artefacts	● Historical (European) Recording	● 15m	● Southern Whistlers	● EPBC/NC	● Historical (European) Recording	● 20m	
— Electrical Transmission Line	▭ Pipeline Structures	● Pink Tail Worm Lizard	● Firm dam	● Historical (European) Recording	● Previous Cultural Heritage Recording	● 25m	● Speckled Warbler	● EPBC/TSC	● Surface Artefacts and PAD	● 30m	
— New Electrical Alignment	▭ Cadastral Boundary	● Swainson's Reata	● Driveway	● Previous Cultural Heritage Recording	● New Navin Data (TBC)	● 35m	● Varied Sitella	● Nominal TSC	● Surface Aboriginal Artefacts and PAD	● 40m	
— River/Creek	▭ New Electrical Easement	● Wombat Burrow	● Tree to be preserved	● New Navin Data (TBC)	● Linear Feature/Structure	● Yellow box	● White-winged Triller	● 1'SC	● Potential Archaeological Deposits (PAD)	● Vehicle access and movement direction	
— Pipeline Alignment	▭ Waterbody	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	● Liliopsis fimbriata	



BULK WATER ALLIANCE



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Sensitive Area Diagrams
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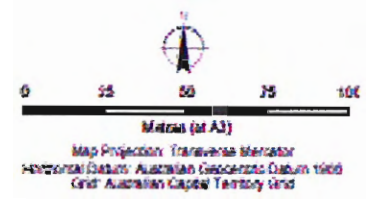
Project Reference: GHD_M2G_GEN_EN_SAD_001_A_3
 Revision: E
 Date: 28 Oct 2010
 Peer review:
 Technical review:

Works in waterways to be carried out in accordance with "Working in Waterway - EWMS" (BWA-M2G-EN-EWMS-006) and relevant drawings



Legend

Monitoring Location	Fenced Work Compound & Laydown Area	Pre-Construction Survey Data	Land Owner Constraints/Features	Native Marginal Attributable	Atypical Wetland	Local Wetland	Endemic Wetland	Native Wetland	EPBC Act	Heritage (Pre-1900) Reserving	Construction Control Width
Heritage Transmission Line	Private Structures	Water Reservoir	Soil Area of "100"	Native Marginal Attributable	Atypical Wetland	Local Wetland	Endemic Wetland	Native Wetland	EPBC Act	Heritage (Pre-1900) Reserving	Construction Control Width
New Road/Alignment	Coloured Boundary	New Road/Alignment	Water Reservoir	Native Marginal Attributable	Atypical Wetland	Local Wetland	Endemic Wetland	Native Wetland	EPBC Act	Heritage (Pre-1900) Reserving	Construction Control Width
River Channel	New Fenced Reserve	River Channel	Water Reservoir	Native Marginal Attributable	Atypical Wetland	Local Wetland	Endemic Wetland	Native Wetland	EPBC Act	Heritage (Pre-1900) Reserving	Construction Control Width
River Alignment	Waterbody	River Alignment	Water Reservoir	Native Marginal Attributable	Atypical Wetland	Local Wetland	Endemic Wetland	Native Wetland	EPBC Act	Heritage (Pre-1900) Reserving	Construction Control Width



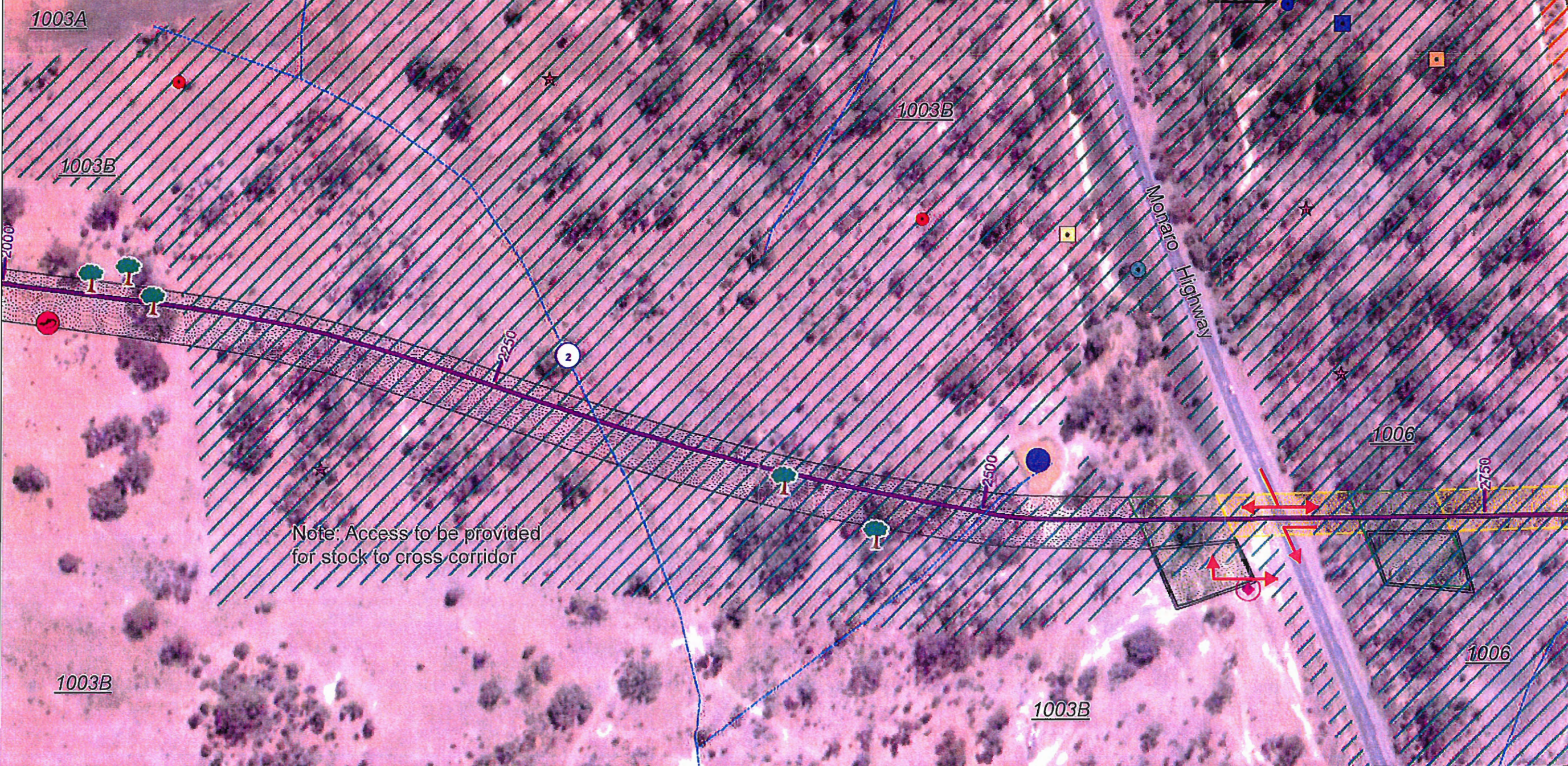
BULK WATER ALLIANCE



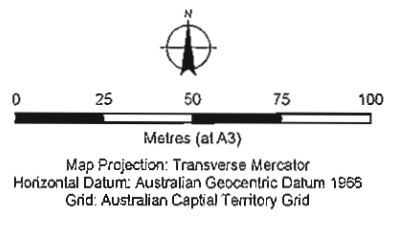
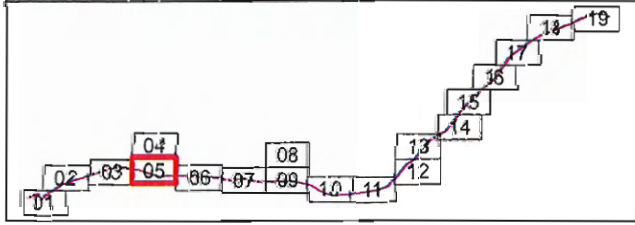
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Works in waterways to be carried out in accordance with "Working in Waterway - EWMS" (BWA-M2G-EN-EWMS-006) and relevant drawings



Legend		Fenced Work Compounds & Laydown Areas		Pis-clearance survey data		Land owner constraint/feature		Surface Aboriginal Artefacts		Historical (European) Recording		Previous Cultural Heritage Recording		New Navin Data (TBC)		Arthropod/Invertebrates		Lulus australis		Swainsona sericea		Jacky Winter		Southern Whiteface		EPBC/CRG		Historical (European) Recording		Construction Corridor Width		
Monitoring Location	Electrical Transmission Line	Pipeline Structures	Catastral Boundary	New Electrical Easement	Waterbody	Hollow Bearing Tree	Be Aware of "XYZ"	Farm dam	Driveway	Tree to be preserved	Yellow box	Surface Aboriginal Artefacts	Historical (European) Recording	Previous Cultural Heritage Recording	New Navin Data (TBC)	Arthropod/Invertebrates	Lulus australis	Swainsona sericea	Jacky Winter	Southern Whiteface	EPBC/CRG	Historical (European) Recording	Construction Corridor Width	Vehicle access and movement direction	EPBC/TSC	Surface Aboriginal Artefacts and PAD	Potential Archaeological Deposits (PAD)	15m	20m	25m	30m	40m
New Electrical Alignment	River/Creek	Pipeline Alignment	Waterbody	Clearance survey data	Land owner constraint/feature	Surface Aboriginal Artefacts	Historical (European) Recording	Previous Cultural Heritage Recording	New Navin Data (TBC)	Arthropod/Invertebrates	Lulus australis	Swainsona sericea	Jacky Winter	Southern Whiteface	EPBC/CRG	Historical (European) Recording	Construction Corridor Width	Vehicle access and movement direction	EPBC/TSC	Surface Aboriginal Artefacts and PAD	Potential Archaeological Deposits (PAD)	15m	20m	25m	30m	40m	15m	20m	25m	30m	40m	



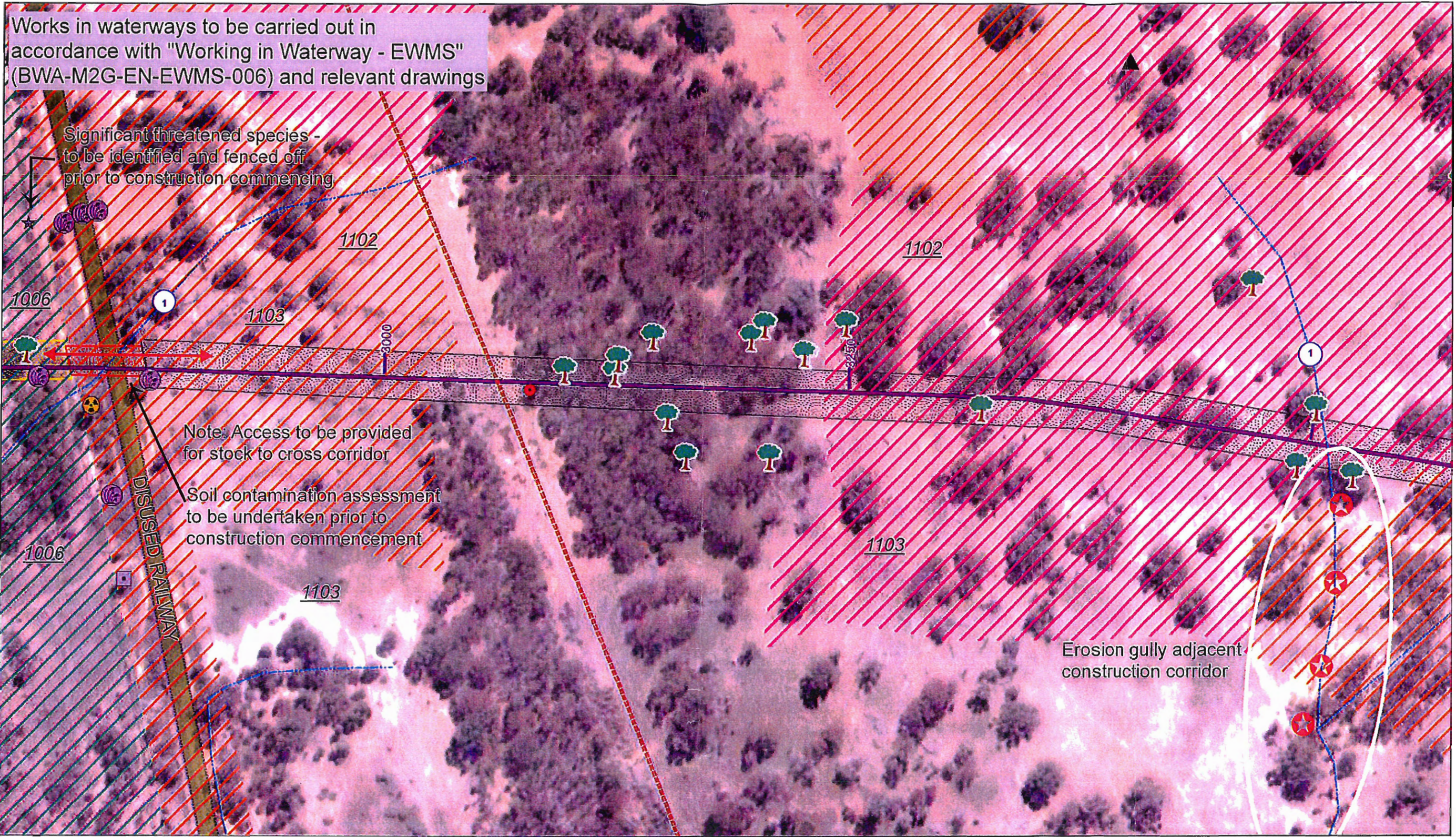
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Murrumbidgee to Googong Water Transfer Project

Sensitive Area Diagrams
Landholder Constraints

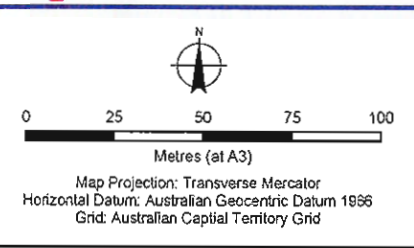
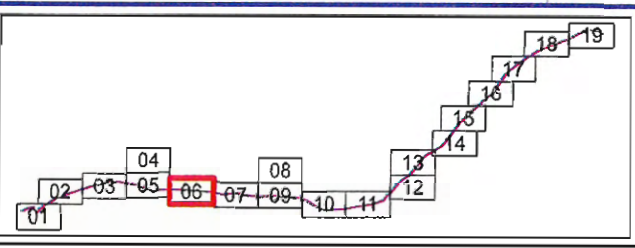
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Legend

<ul style="list-style-type: none"> Monitoring Location Electrical Transmission Line New Electrical Alignment River/Creek Pipeline Alignment 	<ul style="list-style-type: none"> Fenced Work Compounds & Laydown Areas Pipeline Structures Cadastral Boundary New Electrical Easement Waterbody 	<ul style="list-style-type: none"> Pre-clearance survey data Hollow Beaning Tree Pink Tail Worm Lizard Swainsonia Recta Wombat Burrow Linear feature/structure Yellow box 	<ul style="list-style-type: none"> Land owner constraint/feature Be Aware of "XYZ" Farm dam Driveway Tree to be preserved Surface Aboriginal Artefacts Historical (European) Recording Previous Cultural Heritage Recording New Navin Data (T&C) 	<ul style="list-style-type: none"> Anthropodium fimbriatus Discania pubescens Leucocorysum albicans var. tricolor Linum marginale Artrepodium fimbriatus Lotus australis Microseris lanceolata Pterostylis sp. Swainsonia recta Swainsonia sericea Zornia dyotocarpa Diamond Firetail Eastern Berrwing-bat Gang-gang Cockatoo Jacky Winter Large-footed Myotis Pink-tailed Worm Lizard Restless Flycatcher Scarlet Robin 	<ul style="list-style-type: none"> Southern Whiteface Speckled Warbler Varied Sittella White-winged Triller EPBC/TSC Nominal TSC TSC Historical (European) Recording Surface Artefacts and PAD Surface Aboriginal Artefacts and PAD Potential Archeological Deposits (PAD) 	<ul style="list-style-type: none"> Construction Corridor Width 15m 20m 25m 30m 35m 40m Vehicle access and movement direction
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