

General Terms of Approval

for work requiring a controlled activity approval
under s91 of the *Water Management Act 2000*

Number	Condition	File No:40ERM2017/0462
Site Address:	303 Burra Road, Gundagai NSW	
DA Number:	DA 242/2017	
LGA:	Gundagai Shire Council	
Plans, standards and guidelines		
1	These General Terms of Approval (GTA) only apply to the controlled activities described in the plans and associated documentation relating to DA 242/2017 and provided by Council: (i) Site plan, map and/or surveys (ii) Structural design and specifications (iii) Vegetation Management Plan Any amendments or modifications to the proposed controlled activities may render these GTA invalid. If the proposed controlled activities are amended or modified DPI Water (formerly the NSW Office of Water) must be notified to determine if any variations to these GTA will be required.	
2	Prior to the commencement of any controlled activity (works) on waterfront land, the consent holder must obtain a Controlled Activity Approval (CAA) under the Water Management Act from DPI Water. Waterfront land for the purposes of this DA is land and material in or within 40 metres of the top of the bank or shore of the river identified.	
3	The consent holder must prepare or commission the preparation of: (i) Vegetation Management Plan (ii) Works Schedule (iii) Soil and Water Management Plan	
4	All plans must be prepared by a suitably qualified person and submitted to the DPI Water for approval prior to any controlled activity commencing. The following plans must be prepared in accordance with DPI Water's guidelines located at www.water.nsw.gov.au/ Water-Licensing/Approvals. (i) Vegetation Management Plans (ii) Riparian Corridors	
5	The consent holder must (i) carry out any controlled activity in accordance with approved plans and (ii) construct and/or implement any controlled activity by or under the direct supervision of a suitably qualified professional and (iii) when required, provide a certificate of completion to DPI Water.	
Rehabilitation and maintenance		
6	The consent holder must carry out a maintenance period of two (2) years after practical completion of all controlled activities, rehabilitation and vegetation management in accordance with a plan approved by the DPI Water.	

Number	Condition	File No:40ERM2017/0462
7	The consent holder must reinstate waterfront land affected by the carrying out of any controlled activity in accordance with a plan or design approved by the DPI Water.	
Reporting requirements		
8	The consent holder must use a suitably qualified person to monitor the progress, completion, performance of works, rehabilitation and maintenance and report to DPI Water as required.	
Security deposits		
9	The consent holder must provide a security deposit (bank guarantee or cash bond) - equal to the sum of the cost of complying with the obligations under any approval - to DPI Water as and when required.	
Drainage and Stormwater		
10	The consent holder is to ensure that all drainage works (i) capture and convey runoffs, discharges and flood flows to low flow water level in accordance with a plan approved by DPI Water; and (ii) do not obstruct the flow of water other than in accordance with a plan approved by DPI Water.	
Erosion control		
11	The consent holder must establish all erosion and sediment control works and water diversion structures in accordance with a plan approved by DPI Water. These works and structures must be inspected and maintained throughout the working period and must not be removed until the site has been fully stabilised.	
Maintaining river		
12	The consent holder must ensure that (i) river diversion, realignment or alteration does not result from any controlled activity work and (ii) bank control or protection works maintain the existing river hydraulic and geomorphic functions, and (iii) bed control structures do not result in river degradation other than in accordance with a plan approved by DPI Water.	
River bed and bank protection		
13	The consent holder must establish a riparian corridor along adjoining unnamed drainage line and Sprilby Creek in accordance with a plan approved by DPI Water.	
END OF CONDITIONS		



**Office of
Environment
& Heritage**

Your reference: DA 242/2017
Our reference: DOC 17/348553
Contact: Miranda Kerr
Ph: 6022 0607

Mr Brent Livermore
Health, Building and Planning Officer
Cootamundra-Gundagai Regional Council
PO Box 34
GUNDAGAI NSW 2722

Dear Mr Livermore

**RE: Proposed expansion of existing Waste Disposal Facility - 303 Burra Road, Gundagai
9Lots 472 & 502 DP751421 & Lot 2 DP111917) – DA 242/2017**

I refer to your email dated 27 June 2017 seeking comments from the Office of Environment and Heritage (OEH) regarding the Environmental Impact Statement (EIS) for the above proposal. This response is about statutory application of the *National Parks and Wildlife Act 1974* and the *Threatened Species Conservation Act 1995*.

We have reviewed the information provided against our requirements sent to the Department of Planning and Environment on 30 August 2016 (EAR 1076), as well as our comments regarding the draft Flora and Fauna Impact Assessment (FFIA) and Aboriginal cultural heritage (ACH) information emailed to Rohan Johnson (Salvestro Planning) on 25 January 2017.

The information presented in the EIS on the ACH assessment is limited, and it is unclear to whether the entire development footprint was assessed during the initial site visit undertaken by Brungle Tumut Local Aboriginal Land Council in December 2015. While the likelihood of impacts on ACH are considered to be low due to prior disturbance at the site, we recommend that further information be obtained to ensure that ACH has been adequately assessed.

The FFIA has only partially addressed the concerns we raised regarding biodiversity in January. The biodiversity survey was undertaken three years before the SEARs were issued and the FFIA does not clearly state the limitations of this approach. However, the inclusion of a protocol for minimising the impacts on hollow-dependent threatened fauna prior to the removal of three mature White Box (*Eucalyptus albens*) trees is an appropriate measure to mitigate the impacts.

If development approval is granted, we recommend the following conditions of consent:

- *Ensure an appropriate management process is in place should ACH be unexpectedly encountered during construction and operation of the proposed landfill expansion; and*
- *Prepare and implement a fauna management protocol to mitigate the potential impacts to hollow-dependent threatened fauna.*

If you require further information about this matter please contact Miranda Kerr on 6022 0607 or at miranda.kerr@environment.nsw.gov.au.

Yours sincerely

 17/7/17

PETER EWIN
Senior Team Leader Planning
South West Region
Regional Operations
Office of Environment and Heritage

Enclosure: ATTACHMENT A – Detailed comments for proposed expansion of existing Waste Disposal Facility - 303 Burra Road, Gundagai (DA 242/2017)

ATTACHMENT A Detailed comments for proposed expansion of existing Waste Disposal Facility - 303 Burra Road, Gundagai (DA 242/2017)

Aboriginal cultural heritage

9.12.1 Aboriginal Cultural Heritage

The EIS provides limited detail in relation to the Aboriginal cultural heritage (ACH) assessment specified by OEH in our SEARs on 30 August 2016. It is important that all conclusions in relation to ACH are supported by adequate data and details of any visual inspection undertaken are sufficiently documented. Due to the disturbed nature of the site we believe that the likelihood of ACH occurring on site is low. However, it is unclear from the information presented whether the entire development footprint has been assessed and therefore whether there is likely to be any impact to ACH during the construction and operation of this proposal.

Consideration in the EIS of ACH as it relates to the proposal is limited to a current Aboriginal Heritage Information Management System (AHIMS) search dated 19 April 2017. It is stated that *"further consultation with Brungle-Tumut Local Aboriginal Land Council (BTLALC) was undertaken inclusive of a site inspection by 2 BTLALC representatives that did not identify any ACH constraints"* (page 152). Appendix 29 (page 825) includes a letter from BTLALC confirming that a site assessment carried out at 303 Burra Road on 1 December 2015, which is prior to SEARs being issued for the current proposal. We are unable to determine if the site assessment included the new cell, ancillary works and gully diversion proposed for DA 242/2017.

We recommend that further information be sought from the proponent and BTLALC to determine if the current proposed development footprint was assessed in the initial field visit. If this can not be confirmed, further information should be sought to ensure that Aboriginal objects are not harmed during the construction and operation of this proposal. This should include:

- *A visual inspection of the proposed impact area by a person/s with expertise in locating and identifying Aboriginal sites and objects to:*
 1. *Identify whether Aboriginal objects are, or are likely to be, present in the proposed development area;*
 2. *Determine whether the proposed activities are likely to harm Aboriginal objects (if present); and*
 3. *Determine whether further assessment in the form of an Aboriginal Cultural Heritage Assessment (ACHA) and/or an Aboriginal Heritage Impact Permit (AHIP) application is required.*

The EIS does not include a clearly defined process for the management of Aboriginal sites or objects should they be encountered unexpectedly during construction or operation of the waste management facility expansion. While the likelihood that impacts to ACH are considered to be low due to the prior disturbance at the site, full care needs to be taken should Aboriginal sites or objects be encountered.

We note that the letter provided by BTLALC offers the proponent some instruction if ACH is encountered. However, to be compliant with legislation in place to protect ACH in NSW, we recommend inclusion of the following process to ensure that no additional harm is caused should ACH be encountered during proposed works:

If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, the proponent must:

1. *Not further harm the object;*
2. *Immediately cease all work at the particular location;*
3. *Secure the area to avoid further harm to the Aboriginal object;*
4. *Notify OEH as soon as practical on 131555, providing any details of the Aboriginal object and its location; and*
5. *Not recommence any work at the particular location unless authorised in writing by OEH.*

If skeletal remains are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and OEH contacted.

Biodiversity

The following is a review of the *Flora and Fauna Impact Assessment (FFIA) – expansion to existing waste management facility, Burra Road Gundagai (Rev 3)*, prepared by advitech for Salvestro Planning on 9 January 2017.

Section 3.1 Database Searches and Literature Reviews (page 4)

Table 4 (page 7) shows that the biodiversity survey was conducted in August 2012, three years before SEARs were issued and the desktop assessment including records from BioNET (Atlas of NSW Wildlife) was undertaken. This database provides point locations for individual species but does not give results for threatened ecological communities (TECs). The OEH Threatened Species website (www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species) can be used to generate a list of known and predicted TECs using the vegetation class (see comments about Section 3.2.1 below) and the subregion. The proposal site is in the Upper Slopes subregion and is vegetated by a highly degraded Western Slopes Grassy Woodland.

Section 3.2.1 Flora (page 4)

This section states that “vegetation communities were determined by comparing the floristic structure and composition of the vegetation on site with vegetation profiles described within the VIS database (OEH, 2016) and community descriptions of endangered ecological communities known to occur in the local area”. The vegetation is then described in Section 4.2.1 (page 10) in the broad vegetation types used by Mulvaney *et al.* (2005) in their Native Vegetation of Gundagai Shire.

In future, vegetation in NSW should be described using the Plant Community Type (PCT) classification. The original PCT at this site was likely to have been ID 347 “White Box - Blakelys Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion”, which is part of the Western Slopes Grassy Woodlands vegetation class.

Section 3.2.2 Fauna (page 4)

The description of fauna survey methods in Table 2 doesn't include hollow assessment, which is the most likely impact to threatened fauna due to the proposal. Section 4.3.2 lists five hollow-dependent threatened fauna species with a moderate or greater likelihood to use habitat available on the site, which are assumed to be present. A targeted fauna survey during the correct time of year may have confirmed presence or absence of these species.

Section 4.2.2 Threatened Ecological Communities (page 13)

We agree that the site is unlikely to support vegetation that is part of a TEC, based on photographs and site description provided in the FFIA. Guides and community descriptions for TSC Act-listed TECs can be accessed via the OEH Threatened Species website.

The flowchart provided as Figure 5 does not determine if vegetation conforms to the 'White Box, Yellow Box, Blakely's Red Gum Woodland' endangered ecological community, listed under the NSW TSC Act.

While the then NSW Department of Environment, Climate Change and Water prepared the *National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland EEC* (DECCW 2010), the plan only relates to the community listing under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Threatened ecological communities do not have a size threshold in NSW.

Section 6 Mitigation Measures (page 19)

6.3 Fauna and Habitat Protection

OEH supports the preparation of a protocol for managing the impact to hollow-dependent fauna. In addition to measures described in section 6.3, the protocol should include, but not be limited to, the following:

- Before construction starts, contact is to be made with the local wildlife rescue organisation regarding the proposed works and their willingness to accept injured fauna including microbats.
- An appropriately qualified person undertakes a targeted survey of the three hollow-bearing trees to be removed for Little Lorikeet, Turquoise Parrot, Superb Parrot, Yellow-bellied sheath-tail-bat and Corben's Long-eared Bat.
- Actions to be taken if threatened fauna species are found within or near the proposal site during construction include halting construction.
- The wildlife rescue organisation is to be contacted immediately if injured or orphaned threatened fauna are found within the construction site or adjacent habitat. Under no circumstances are microbats to be handled, except by a wildlife carer, as they are known to carry Australian Bat Lyssavirus and Hendra virus.

Brent Livermore

From: Grace Foulds
Sent: Monday, October 30, 2017 8:50 AM
To: Brent Livermore; Chris Imrie
Subject: FW: Attn.: Chris Imrie - OEH Response: Additional information Burra Road Landfill
Attachments: DOC17-348553 OEH Response EIS Burra Rd Landfill Jul17.pdf

FYI

Regards,

Grace Foulds
Town Planner
Cootamundra-Gundagai Regional Council



P: (02) 6940 2100
M: -
E: Grace.Foulds@cgrc.nsw.gov.au
W: www.cgrc.nsw.gov.au

From: Peter Ewin [mailto:Peter.Ewin@environment.nsw.gov.au]
Sent: Tuesday, October 24, 2017 1:59 PM
To: Mail
Cc: Daniel Clegg ; Miranda Kerr ; Andrew Fisher
Subject: Attn.: Chris Imrie - OEH Response: Additional information Burra Road Landfill

Chris,
We have reviewed the additional information provided in relation to the Expansion of Existing Waste Disposal Facility (DA 242/2017) – Burra Road,, Gundagai.
We note that further correspondence from Brungle-Tumut Local Aboriginal Land Council (LALC) has been obtained detailing the nature of the visual inspection of the site.
We recommend that the conditions detailed in our previous correspondence, dated 17 July 2017 (attached) be considered if this application is approved. Of importance is the condition relating to the discovery of unexpected Aboriginal objects – it is a requirement that OEH be the initial contact (and NSW Police if human remains are encountered) and we will then coordinate input from the LALC and other relevant community members.
Do not hesitate to give me a call on the numbers below if you have any questions regarding this response.
Thanks,
Peter

Peter Ewin
Senior Team Leader Planning, South West

Regional Operations Division
Office of Environment and Heritage
Ph: 02 6022 0606
Fax: 02 6022 0610
Mob: 0427 433 937

Please note we have recently changed our postal address – please send any correspondence to

PO Box 1040
ALBURY NSW 2640

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.
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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL



27 July 2017

SWT16/00030
SF2016/035091

The General Manager
Gundagai Council
PO Box 420
COOTAMUNDRA NSW 2590

Attention: Brent Livermore

DA242/2017 – PROPOSED EXPANSION OF WASTE DISPOSAL FACILITY – 303 BURRA ROAD, GUNDAGAI - LOTS 472 & 502 DP751421 & LOT 2 DP111917

I refer to your correspondence regarding the subject Application which was referred to the Roads and Maritime Services for assessment and comment.

From the information provided it is understood that the development proposal is for the expansion of the existing landfill operation on the subject site. The subject site has frontage to Burra Road, which is classed as a local road, within a 100 km/h speed zone.

It is noted that development consent was granted for DA11/2013 for the operation of a landfill on the site. It is understood that the current maximum approved rate of material permitted to be deposited into the landfill is 40,000 tonnes per annum and that the proposed expansion requests an increase of this current maximum deposit rate to 60,000 tonnes over an extended lifetime, providing an overall expanded future capacity to 730,000 tonnes (waste and lining material).

Section 9.5 of the Environmental Impact Statement prepared by Salvestro Planning addresses traffic and transport. This section suggests the implementation of mitigation measures to be employed as part of the operation of the subject development.

The submitted documentation claims that the proposed expanded landfill operation will involve minimal additional traffic generation above existing volumes to the site. The number of vehicle trips required for the haulage of waste will vary depending on the production demands at Visy. From the haulage data provided for the 2014/2015 financial year it is noted that the maximum number of truck loads per day from Visy was 20 loads (40 Movements) however this occurred on a limited number of occasions with the majority of loads per day being 10 loads (20 movements) or less.

The submitted documentation suggests that due to the current transport fleet and the distance of haulage that a maximum of 10 movements (5 trips) per day can be achieved by each vehicle. This represents a maximum of 20 movements per day by the current transport fleet which consists of 2 heavy truck and trailer combinations. Should consent be granted for the proposed development a condition should be included requiring the verification of haulage numbers be provided to the consent authority on a regular basis.

Roads and Maritime considers that this volume of heavy vehicles would not represent a significant impact on the classified road network between the Visy site and the landfill site. It is noted that the

haulage route includes access along the Hume Highway from South Gundagai turning from the highway into Gundagai on the northern side of the Murrumbidgee River.

It is noted that vehicle activated lights are currently installed on Burra Road on the southern approach to its intersection with the access road to the landfill site. As a result of the increased traffic volumes proposed it would be appropriate to review of the current operation of the warning lights, particularly the activation mechanism, to ensure that the lights are activated by all vehicles exiting the site. It is noted that the proponent considers that the current system is adequate however the automation of the system should allow for all vehicles exiting the site to activate the system. Further to this a maintenance regime should be developed to ensure that the warning lights and activation mechanism is checked on a frequent basis by the operator of the landfill site with proof of this provided to the consent authority on request.

Further to the above, consideration should be given to a requirement for the development of a Transport Management Plan in consultation with the relevant road authority, to outline measures to manage traffic related issues associated with the operation of the development and haulage of material. This plan should focus on the management of traffic generated by the development, the potential impacts, the measures to be implemented, and the procedures to monitor and ensure compliance. It shall address, but not necessarily be limited to:

- measures to ensure heavy vehicles adhere to the designated haulage route,
- measures to maximise the use of a low frequency (regular) trucking schedule rather than an intermittently-high frequency (campaign) trucking schedule,
- plans to address poor visibility due to adverse weather eg heavy rain periods, fog, etc along the haulage route,
- contingency plans to address disruptions to haulage or closure of the haulage route,
- measures to ensure that all loaded vehicles are covered, and are cleaned of materials that may fall onto public roads,
- details of procedures for receiving and addressing complaints from the community concerning traffic issues associated with truck movements to and from the quarry,
- measures to be employed to limit disruption to other motorists, emergency vehicles and school bus timetables,
- a Driver Code of Conduct to address such items as; appropriate driver behaviour including adherence to all traffic regulations and speed limits, safe overtaking and maintaining appropriate distances between vehicles, etc and appropriate penalties for infringements of the Code,
- the management of worker fatigue during trips to and from the site,
- appropriate vehicle maintenance and safety, and
- procedures to provide for training and compliance with and enforcement of the plan.

Roads and Maritime Services has reviewed the information provided and advises that subject to consideration of the items outlined above by the consent authority that it would not object to the development as proposed.

Please be advised that under the provisions of the Environmental Planning & Assessment Act it is the responsibility of the Consent Authority to assess the environmental implications, and notify potentially affected persons, of any development including conditions.

Any enquiries regarding this correspondence may be referred to the Manager, Land Use for Roads and Maritime Services (South West Region), Maurice Morgan, phone (02) 6923 6611.

Yours faithfully



Per:
Peter McMahon
Acting Director
South West NSW

ATTACHMENT 5

To: Brent Livermore
Subject: RE: Burra Road Landfill - DA 242/2017

From: Hollie Munro [<mailto:hollie.munro@foodauthority.nsw.gov.au>]
Sent: Tuesday, November 14, 2017 10:55 AM
To: Brent Livermore <brent.livermore@cgrc.nsw.gov.au>
Subject: Re: Burra Road Landfill - DA 242/2017

Hi Brent,

I am really sorry about the late reply- I have been having serious technology issues.

I ended up speaking to the Manager of my Team and he has said that there are no rules regarding how close a landfill can be to a food processing facility so it is hard to make a judgement call from our end. The honey business is very low risk with the department and inspections occur if there is a complaint only, at this point.

As long as the honey processing facility has appropriate controls in place to prevent contamination then (without actually having been there) it would be deemed acceptable.

I hope this helps you.

Hollie.

Sent from my iPad





Your Ref: DA242/2017
Our Ref: 16056
Contact: Garry Salvestro

20 November 2017

The General Manager
 Mr Allen Dwyer
 Cootamundra-Gundagai
 255 Sheridan Street
 Gundagai NSW 2722

ATTN: Brent Livermore, Chris Imrie

Dear Allen,

RE: DA242/2017 – BURRA ROAD LANDFILL EXPANSION - MHE

We refer to the NSW EPA's (EPA) response letter to Council dated 3 November 2017 in respect of the above project. A copy of this letter has been provided to the applicant's expert consultants for comment, including SLR Consulting (Project Design and Surface Drainage), DM McMahon (Hydrology and Hydrogeological) and Advitech Environmental (Air Quality and Noise), particularly in light of the evident position EPA have taken in their opinion of this development proposal.

Cootamundra-Gundagai Regional Council (Council) are requested to consider the preliminary comments below, together with the detailed attachments, with a view to facilitating further discussion with EPA to resolve apparent diverse scientific views on the appropriateness and potential impact of the proposal.

EPA's response is obviously of serious concern to the applicant, particularly in light of the extent of preliminary consultation undertaken by the applicant's team of experts with the EPA and all other relevant authorities prior to development application submission and during assessment. In particular, a meeting with technical representatives from EPA on 30/6/17 discussed in detail the main areas of concern and appropriate responses expected by EPA to address these concerns. This consultation included a follow up review of draft additional information reports that EPA then deemed as "fit for purpose".

We note that other agencies, including DPI Water have issued their general terms of approval (GTAs) to this proposal.

Preliminary Comments:

<u>EPA Item</u>	<u>Applicant Comment (via expert consultants)</u>
<u>Background:</u> <i>Referring to their 30/8/16 SEARs response and the 2016 Solid Waste Landfill Guidelines, NSW EPA state</i>	EPA and DUAP guidelines provide a suite of criteria to assess potential impacts and appropriateness of potential sites. The guidelines do not fundamentally prohibit development.

<i>the site is fundamentally inappropriate for landfilling.</i> <i>EPA also refer to a meeting on 4 November 2016 attended by EPA's Regional Director (South & West) Mr. Gary Whytcross who allegedly stated sites should only be developed for landfilling where there is a minimum risk to the environment.</i> <i>Furthermore, the EPA refers to a conversation at that meeting where they considered the proposed expanded site as being inappropriate for landfilling.</i>	A copy of minutes from the 4/11/16 meeting was subsequently circulated to all present. The context of this meeting needs to be expanded, as the discussion points focused on the following concerns: • Significant previous community concerns and objections: - <i>this has now been largely addressed with the majority of submissions being in favour of the development. The fact that community concerns were not an EPA matter, but a planning matter was discussed.</i> • Insufficient detail provided within the previous submission: - <i>a stronger, more robust submission was promised utilizing key experts in the field to provide a comprehensive EIS and design, this has been done, and</i> • Concerns over the siting and groundwater protection - <i>it was agreed that the landfill proposal would include state of the art engineered barrier systems that fully met the requirements of the NSW EPA Environmental Guidelines, Solid Waste Management, Second Edition (2016). A three-dimensional groundwater model was requested by the EPA at the meeting which in turn would be used to steer the landfill design, this has been delivered.</i>
<u>Site Selection:</u> <i>With reference to the EPA and DUAP guidelines quoted, the EPA's position remains unchanged, in that the proposal being considered, is within 40 metres of an intermittent water body, given the proposed landfill expansion is to occur within an unnamed third order intermittent stream.</i> <i>EPA conclude that available data indicates that the site may be fundamentally unsuitable for the proposed development based on the potential for groundwater quality impacts. The EPA considers that the information provided in the EIS does not provide the necessary certainty to the EPA that the potential risks to the environment from the proposed development have not been fully and adequately assessed, and that those risks can be adequately prevented, mitigated or managed.</i> <i>The EPA considers that the proposal represents an unacceptable risk to the environment.</i> <i>The EPA considers the EIS is deficient in demonstrating the site's fundamental suitability for the proposed land fill development or that no further deterioration in the quality of the groundwater will occur,</i>	• The NSW EPA Environmental Guidelines, Solid Waste Management, Second Edition (2016) are guidelines only, and outline international best practice and techniques. The document also aims to encourage a risk assessment based approach to environment protection through engineering design, operational excellence and appropriate regulation. • Other examples of landfills positioned within sensitive (inappropriate) settings are currently being reviewed, and approved by the NSW EPA. An example being the Verde Terra Mangrove Mountain facility highlighted in the ABC Four Corners documentary which sits directly over a groundwater aquifer that feeds the Central Coast water supply. Furthermore, the base of the Gregadoo Landfill in nearby Wagga Wagga is beneath the local groundwater table, a substantial groundwater interception trench has been constructed to divert the groundwater flow around the site. We also believe that the landfill within the northern valley at Albury Waste Management Facility, and the Blaxland Waste Management Facility has been constructed with stormwater/groundwater piped beneath the base of the landfill. With these landfills having been approved, the NSW EPA needs to show consistency in their assessment and approvals process across NSW. • The NSW EPA state the main reason for the site being sited in an appropriate area as being within 40m of a permanent or intermittent water body. The EPA clearly do not understand or agree that the unnamed creek diversion mitigates this issue. DPI Water have issued their GTAs whereby approving the diversion concept.

and that no existing or likely future uses of groundwater will be compromised from the proposed development.

- The EPA also infer that the site is within an area of high environmental value or associated with high environmental risks. The site in fact has an existing landfilling facility, with neighbouring historic unlined landfilling operations and night soil facility. The proposed engineering design (suitable for putrescible wastes) will provide a greater level of environmental protection than previous waste disposal operations at the site and surrounding area.

ATTACHMENT A

- The EPA state in their response to site selection Page 3, that *'the more suitable sites require fewer engineering and management controls'*, this is not necessarily the case, as more robust engineering designs and solutions can afford a greater level of environmental protection and robustness when implemented with detailed environmental management plans and an EPL.
- The NSW EPA refer to Section 4.1 of the NSW DP&E EIS Practice Guideline, as follows:
 - *Reduce the need for technically based environmental mitigation measures and ongoing management measures* – this is a statement that does not preclude the siting and design at Burra Road. Burra Road is not a complex design with groundwater at depth, natural clay geological barrier, general solid waste non-putrescible waste infill, robust EPA compliant engineering design and comprehensive capping, rehabilitation and aftercare management plan etc.
 - *Result in substantial savings in establishment and operation* – these are commercial considerations taken by the proponent and not a concern of the EPA. A Rehabilitation Bond will need to be lodged with the EPA to mitigate against risk of non-rehabilitation by any operator.
 - *Reduce levels of public concern, and avoid potential delays in approval processes* – public concern has been addressed by the public open day whereby concerns were discussed with the public and solutions offered, furthermore, the view of the public, and Council is now one of general support due to ongoing efforts by MHE.
- The NSW EPA comment in response to the diversion of the intermittent creek or unnamed stream *'would create challenges in construction, operation and post closure phases'*. The EPA should expand on these concerns. Construction details are covered in detail within the basis of design report, CQA Plan and operational documentation such as water management plans. DPI Water have issued their GTA's which need to be considered fully by the NSW EPA. We see little specific challenges during construction, operation and post diversion compared with any other landfill facility. All stages of the construction will follow the requirements of a Construction Quality Assurance (CQA) Plan, will have to meet manufacturers recommendations for

	geosynthetic deployment and use robust engineering best practice and standards. The construction works shall be rigorously supervised by an independent CQA Engineer with all construction information being collated into a CQA validation report and submitted to the EPA for consideration. Environmentally Sensitive Areas - The EPA state that most sites identified within Table 1, landfills are unlikely to be permissible land use under existing planning controls. The fact that the site is an existing landfill, with an existing NSW EPA approved EPL and planning consent deems the site an appropriate site for landfilling. EIS – Site Suitability Assessment - There is concern that the EPA comments are overly subjective and speculative, with a potential for misconceptualising the proposal. - The EIS technical documents show that the proposed development does demonstrate suitability by incorporating a natural geological barrier, surface water diversion, composite lined barrier containment and capping meeting NSW EPA design standards, robust stormwater and sediment control measures etc. - Further detailed response is contained in DM McMahon's comments dated 15/11/17 attached.
<u>EIS – Groundwater Impact Assessment:</u> <i>The EPA state that the existing development may have had a significant impact on groundwater quality downgradient from the current landfill, based on monitoring data of point P1 since 2014.</i> <i>EPA consider the expansion has the potential to further alter the hydrogeochemistry of the area through modifying flow paths of both surface and groundwater.</i> <i>EPA state that the EIS does not provide an assessment or discussion on the impacts of channel diversions on the local groundwater flow regime and its potential impact on groundwater quality at the site.</i> <i>EPA also state:</i> <i>Potential changes in salinity levels in P1 have not been assessed</i> <i>There has been no assessment of potential impacts upon the quality and quantity of groundwater in groundwater bores within 1.2km of the site.</i>	- See detailed response contained in DM McMahon's comments dated 15/11/17 attached. - Comments from DM McMahon's suggest that the EPA have an inconsistent approach surrounding the increase in salinity in P1. The EPA present on one hand that there is no 'sound explanations of the processes controlling groundwater quality at P1' while on the other 'the changes are a result of existing operations'. The change in water quality at P1 has been studied extensively in four reports namely, McMahon, DM (2017); Mitchell, M (2017); UNSW (2016); and OEH (2016). In summary, the reports are unanimous in finding that there is no evidence of leachate leaking from the current landfill cell or leachate transfer pond. This is consistent with the hydrogeological characteristics of the site. There is also no evidence that the current landfill has altered hydrogeochemical processes on site other than a predicted stabilisation of TDS at P1 which is likely a return to groundwater conditions that pre-date the sites development as a quarry (pre 1970s). - A conceptual model of the hydrological and hydrogeological processes at Burra Road have been presented and appear to have been misinterpreted and/or misconceptualised by the EPA. - The EPA suggest that the unnamed gully has subsurface flow but the data presented in the EIS demonstrates otherwise. - The gully to be diverted, is eroded to bedrock and the new diversion will handle flows and recharge in a similar way but with rip-rap to slow water velocity and sedimentation for improved downstream water

Concerns over broader changes to the groundwater quality	quality. Importantly, DPI Water who hold the water policy framework for NSW suggest that the diversion will have a nett benefit to the catchment and have issued GTAs accordingly. The hydrology has been assessed in detail by Dr. Ken Page in the EIS and has found the same. • Further clarification is sought from the EPA regarding what is required around a number of the issues raised, as the issues have changed since initial and ongoing communications with them.
<u>EIS – Surface Water Impact Assessment:</u> <i>EPA consider that the EIS does not adequately address the potential impacts of managed overflows from the leachate management system.</i> <i>EPA consider the EIS does not adequately address the potential impacts of construction and operation stage stormwater discharges.</i>	• See detailed response contained in SLR Consulting comments dated 14/11/17 attached. • SLR Consulting have confirmed that the leachate pond and system have been designed to industry standards to ensure no overflow. Since there will be no managed overflow, and all leachate that is stored within the pond is afforded a suitably designed double lined containment system, it is not considered necessary to assess the environmental impacts. • The stormwater system has been designed to industry standards. It is possible to model pollutant generation rates and rates of removal from typical land-uses for pollutants such as TSS, TN and TP using the MUSIC software. However, this software does not predict pollutant loads for other pollutants such as metals, ammonia, etc. We suggest any further specific requirements in this regard be outlined by the NSW EPA so they can be addressed.
<u>Water Balance for the Stormwater Management System:</u> <i>EPA consider the revised EIS does not include a water balance for the stormwater management system.</i>	• See detailed response contained in SLR Consulting comments dated 14/11/17 attached. • The NSW EPA Environmental Guidelines: Solid Waste Landfills, second edition 2016 does not require a water balance for stormwater – it only requires a water balance for the leachate management system. It is therefore considered that a water balance is not required for the stormwater system.
<u>Leachate Management and Disposal:</u> <i>EPA consider the EIS does not adequately address the requirements in relation to providing a leachate water balance including both the existing and new leachate management systems, with capacity to capture direct rainfall up to the 1 in 25yr 24 hour storm.</i> <i>The EIS does not provide an estimate of the typical (over the life of the project) number of tanker loads expected to be required per year to maintain capacity of the leachate pond.</i>	• See detailed response contained in SLR Consulting comments dated 14/11/17 attached. • SLR confirm that the water balance calculations in the EIS already allows for both the existing leachate system servicing the current operation, and the addition of the proposed new leachate system for Cell 3. • The rate and volume of leachate that may need to be tankered off site will depend on rainfall rate. Average rainfall may result in the pond reaching capacity after approximately 3 years, after which an average of 0.7 tankers (10000 litre capacity tanker) per day would be required to maintain adequate capacity. For an extreme 90% rainfall, the pond would reach capacity in 2 years and 5 months and if the extreme rainfall continued, 1.1 tankers per day would be required to maintain adequate capacity.

Water Quality Objectives: EPA indicates that the revised EIS identifies the WQC's but does not adequately consider these when addressing potential impacts of discharges.	Section 4 of DM McMahon's Addendum report to the EIS (Sept 2017) provides a detailed analysis and discussion on WQC's.
Surface Water Monitoring: EPA consider the EIS does not adequately address their requirements: - It does not provide details of how potential surface water impacts will be assessed or include monitoring of the leachate pond or sediment retention ponds; - It does not identify assessment criteria (i.e. trigger values) or management actions in response to exceedances of criteria; - An additional downstream monitoring site would be needed. - The inability to adequately address these issues demonstrates that the EIS does not provide certainty that the potential risk to the environment have been adequately considered and assessed, or can be adequately mitigated.	- See detailed response contained in DM McMahon's comments dated 15/11/17 attached. - Section 5 of DM McMahon's Addendum report to the EIS (Sept 2017) provides a detailed discussion on monitoring and assessment criteria. - See detailed response contained in SLR Consulting comments dated 14/11/17 attached. - DM McMahon request that further clarification is sought from the EPA about what is required around a number of the issues raised as the issues have changed since initial and ongoing communications with them. We seek the EPA to clearly define what additional information or investigations are expected to adequately address their concerns. For example, what monitoring or method would be deemed acceptable to establish background surface water quality and trigger levels and what is expected to address concerns about impacts on the groundwater system from the modification of the drainage line.
Air Quality Assessment: EPA consider that based on the EIS information it is unclear if the assessment has incorporated control factors for wet suppression in the modelled emissions. The EIS does not outline the controls. EPA indicate the EIS does not clarify control efficiencies, hence it cannot be certain if these impacts can be adequately prevented or managed. In relation to assumptions for construction, EPA consider that the EIS did not demonstrate if emission rates for construction are based on maximum intensity.	- See attached response from Advitech Consulting dated 15/11/17. - Advitech confirm that the modelling of the worst case scenario was undertaken without the inclusion of wet suppression control measures. Wet suppression controls are available on site. Mitigation measures were provided in the AQIA that accompanied the EIS. - Advitech confirm that the modification of the design capacity assumption (based on maximum intensity) will not change the emission rates for these emission sources, as they have been determined from the exposed land surface area and hours of vehicle usage.
Noise Traffic Assessment: EPA notes that the Road Traffic Noise Assessment does not appear to include vehicle movements associated with leachate tanker loads, if required once the pond is full.	- The EIS has included all potential vehicle movements for the proposal including "any other miscellaneous activity related to the operation of the landfill" (see section 9.5 of EIS). This included assessment of traffic impact based on an average 16 heavy vehicle movements per workday. An allowance was also made for peak movements of 20 per day associated with the proposed expansion. - Advitech have advised that, in terms of acoustics, 20 truck movements per day were allowed for within the assessment. The model allowed for light

	vehicle movements and heavy vehicle movements associated with the landfill, and also the bee facility. • Advitech also advised that additional modelling may be undertaken to satisfy EPA by specifying potential leachate tanker movements of up to 1 per day, however, this appears unnecessary as the model has already included any potential peak movements as a result of all potential activities generated by the proposal.
<u>Other:</u> <i>Under the PoEOAct, EPA considers the EIS has not:</i> • <i>made an adequate assessment of various options and alternatives to the landfilling of waste on this site;</i> • <i>met ESD principles;</i> • <i>presented a justifiable need for the proposal.</i> <i>EPA consider, in accordance with ESD principles, a precautionary principal approach is required to be taken for this matter.</i>	• The EIS has considered various options and discussed alternative sites in detail noting that the subject site is an existing landfill site surrounded by former landfill operations, other rural industries and rural living activities. • The need for the facility has been justified with the context both economic and social considerations. • The precautionary principal is not a prohibition. It is part of the environmental assessment package. The precautionary principal approach is based on the threat of irreversible environmental damage and a lack of scientific data/research. Also, it allows for preventative measures to be taken which are appropriate relative to the proposal. The proposal, including all EIS data presented to date, has provided considerable contemporary scientific and technical data, research and recommendations from leading environmental scientists that form part of the EIS team as identified in the EIS document.

The applicant requests that further opportunity be provided to address all the comments and concerns raised by EPA to ensure a proper balanced assessment of the subject proposal.

If you require any further clarification on the above, please contact me on (02) 6921 8588.

Yours sincerely,



Garry Salvestro
 Director
 Salvestro Planning

ATTACHMENTS:

1. DM McMahon P/L - 15/11/17
2. Advitech Environmental - 15/11/17
3. SLR Consulting - (14/11/17)



**Comments on EPA Response to DA 242/2017 3 November 2017:
Burra Road Landfill, Gundagai, NSW 2722**

Background

The primary reason the NSW EPA have not issued GTAs appears to be the statement that the expanded site is inappropriate for landfilling, this being determined by the EPA before the site was inspected or the DA assessed. All other points presented by the EPA in their assessment dated 3 November 2017 are secondary to the above and can be resolved by further clarification.

Overall the EPA assessment goes beyond and departs from issues raised for further clarification 25 May 2017 and as discussed in a round table meeting dated 30 June 2017 at the EPA's Albury office. At this meeting the EPA's technical hydrology and hydrogeology experts discussed the EIS and the most practical way to present further information required. One example of this is the consensus that there was not enough data to undertake meaningful hydrogeochemical modelling yet in the assessment 3 November 2017 they suggest that such modelling was not considered.

Site selection

We contend that the use of the UPSS 'environmentally sensitive zones' does not have relevance in this instance. The UPSS guideline uses the 'environmentally sensitive zones' to determine if groundwater monitoring is required or not once fuel tanks are installed. It has little to do with the siting of the UPSS and has nothing to do with the siting of a landfill. As is the case with the Gundagai LEP, the UPSS sensitive zones criteria are a guide only and a site-specific assessment be carried out in order to seek an exemption from groundwater monitoring. A site-specific assessment has been carried out by a team of experts by comprehensive field inspection and modelling and deemed it is not environmentally sensitive.

Attachment A

The EPA have an inconsistent approach surrounding the increase in salinity at P1. They present on one hand that there is no 'sound explanations of the processes controlling groundwater quality at P1' while on the other 'the changes are a result of existing operations'. The change in water quality at P1 has been studied extensively in four reports namely:

- McMahon, DM (2017);
- Mitchell, M (2017);
- UNSW (2016); and
- OEH (2016).

In summary the reports are unanimous in finding that there is no evidence of leachate leaking from the landfill cell or leachate transfer pond. This is consistent with the hydrogeological characteristics of the site. We have always maintained that although we don't have enough data to definitively verify the water quality changes (in a consensus reached with the EPA 30 June 2017) we suggested that they are most likely caused by the disconnection of infiltration from the bottom of a quarry floor by the installation of a clay liner. We correctly predicted groundwater salinity would plateau to be that of the existing groundwater or slightly above (pers.comm. Brian Wild, 2015) and this has occurred with a stabilisation of TDS since July 2016. There is also no evidence that the current landfill has altered hydrogeochemical processes on site other than a predicted stabilisation of TDS at P1 which is likely a return to groundwater conditions that pre-date the sites development as a quarry (pre 1970s). Pre the 1970s quarry development, there would have been a residual clay regolith overlying the

weathered dacite rock that has been removed when quarrying commenced, resulting in higher infiltration from rainfall and flushing of salts from the substrate. As soon as the clay liner for the landfill was placed it changed this process back to what it would have been when the natural landform was in place.

A conceptual model of the hydrological and hydrogeological processes at Burra Road have been presented and have been misinterpreted and/or misconceptualised by the EPA. There have been no water quality changes within or downstream of the unnamed gully noted since the commencement of monitoring and there is nothing to suggest they will change as part of the development. The EPA suggest that the stormwater dam and Sprilbry Creek have both been impacted by landfill leachate owing to 'elevated' levels of NO_x and Ammonia but there are cattle grazing in the creeks and upstream of the dam which are the most likely cause. The creek, gully and dam are highly degraded agricultural land and to continually suggest that it is an environmentally sensitive site impacted by the landfill is a misconceptualisation of the data presented.

From our assessment the diversion does not intersect any aquifers so will not alter flow paths of groundwater which has been misconceptualised by the EPA. The assessment shows that the groundwater on site is a semi-confined to confined aquifer system in weathered dacite and dacite basement rock over 10m from the surface. The groundwater flow is a muted reflection of the natural surface topography, with flow being controlled by the south-south east to north-north west trending regional structures, the cross cutting west to south-west to east to north east structures associated with the drainage lines of the catchments. The unnamed gully where the proposed cell is to be placed intersects an area of sodosols with a pseudogley layer with very little through drainage into the substrate as can be demonstrated by the 'seeps' on the eastern slopes. This process of no through drainage will continue with the proposed cell which mimics the existing process but with erosion controls and less sodium leaching out of the sodosols into the downstream drainages.

The EPA suggest that the unnamed gully has subsurface flow but the data presented demonstrates otherwise. The unnamed gully is eroded to bedrock which is typical of highly modified catchments in the locale. There is no base flow in the unnamed gully categorising it as an ephemeral drainage with flows only after substantial rainfall. There are no springs in the upper reaches of the 75ha catchment to supplement flow from rainfall as is the case with the adjacent Sprilbry Creek catchment. The regolith in the 75ha catchment consists of up to +2m of clayey material overlying weathered dacite rock. Normal hydrological and hydrogeological processes would apply to the 75ha catchment after rainfall, namely: steady rainfall infiltrates the soil until the profile is 'full' then through drainage would occur into the weathered dacite rock. Excess rainfall to this would flow into the incised bedrock channel with some water infiltrating into the substrate but most of it flowing downstream into the storm water dam. The proposal will see the same hydrological and hydrogeological process apply to the diversion and land upstream of the new landfill cell. Surface water run-off from around the new cell will be diverted to the unnamed gully downstream. As discussed above the pseudogley layer in the existing sodosols offer limited through drainage and the proposed cell will mimic this process.

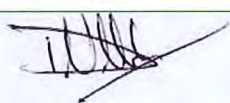
The gully to be diverted, is eroded to bedrock and the new diversion will handle flows and recharge in a similar way but with rip-rap to slow water velocity and sedimentation for improved downstream water quality. DPI Water who hold the water policy framework for NSW think the diversion will have a nett benefit to the catchment and have issued GTAs accordingly. The hydrology has been assessed in detail by Dr Ken Page in the EIS and has found the same.

Summary

In summary, further clarification is sought from the EPA about what is required around a number of the issues raised as the issues have changed since initial and ongoing

communications with them. We seek the EPA to clearly define what additional information or investigations are expected to adequately address their concerns. For example, what monitoring or method would be deemed acceptable to establish background surface water quality and trigger levels and what is expected to address concerns about impacts on the groundwater system from the modification of the drainage line.

Certification and document control

Document control	Name	Signed	Date	Revision Number
Co-compiled by:	Mark Mitchell Hydrogeologist BAppSc Geology (hons) MEnvMgmt		15/11/2017	0
Co-compiled and checked by:	David McMahon BAppSc GradDip WRM		15/11/2017	0

Disclaimer:

The information contained in this report has been extracted from field and laboratory sources believed to be reliable and accurate. DM McMahon Pty Ltd will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. It should be noted that findings in this report are based solely upon the said site conditions at the time of testing and assessment. The results of the said investigations undertaken are an overall representation of the conditions encountered. The properties of the soil, water and geology within the location may change due to variations in ground conditions outside the tested area.

Reference:

DM McMahon Pty Ltd (2017) Hydrogeological, Hydrological and Land Assessment Burra Road Landfill, Gundagai NSW 2722.

Mitchell, M (2017) Addendum to Hydrogeological, Hydrological and Land Assessment Burra Road Landfill, Gundagai NSW 2722.

NSW OEH (2016), Burra Road Landfill Data Analysis and Risk Assessment August 2016, Contaminants and Risk Team, Environment Protection Science Branch, Science Division, DOC16/401633.

UNSW (2016) Burra Road Landfill Hydrogeological and Hydrology Assessment Report Peer Review, WRL2016039DJA.

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15 November 2017

Salvestro Planning
16 Fitzmaurice Street
Wagga Wagga NSW 2650
AUSTRALIA

Attention: Garry Salvestro
Subject: Burra Road Landfill Air Quality Response

Advitech Pty Ltd (T/A Advitech Environmental) was engaged by Salvestro Planning to provide an Air Quality Impact Assessment (AQIA) relating to potential air quality impacts from the expansion of the Gundagai Landfill / Recycling Centre at Burra Road, Gundagai. The purpose of this letter is to respond to two particulars raised by the NSW EPA's assessment of the EIS (Ref: DOC17/488915-15) in regards to Air Quality.

Point 1

Modelling of the worst case scenario for particulate emissions (i.e. construction phase and operating phase simultaneously) was undertaken without the inclusion of wet suppression control measures. The predicted additional exceedances of the PM₁₀ impact criteria during the construction phase prompted a requirement for control measures to minimise dust impacts. Advitech understands that wet suppression controls (i.e. water cart and water cannon as mentioned in Advitech report *14804 Burra Rd Landfill AQGHGIA Rev5*) are available to the Burra Road landfill site. An investigation into the meteorological conditions during the exceedance periods indicates the causes of the impacts were due to wind from the south-west and high wind speeds.

Advitech proposed the following on-site mitigation measures in Section 2.9.2.7 of the Air Quality Impact Assessment (AQIA) dated 10 August 2017:

1. Modifying (or limiting) construction phase activities under conditions when the ambient background PM₁₀ concentration exceeds 30 µg/m³ at the NSW OEH monitoring station at Wagga Wagga (or other PM₁₀ monitoring facility if located closer). In conjunction with this action, M H Earthmoving will operate installed or mobile dust suppression activities (i.e. on-site road cart and pit water cannon) for the duration of time when the ambient background PM₁₀ concentration exceeds 30 µg/m³ during the operational hours of the construction phase.
2. Construction phase activities will be limited and dust suppression activities (i.e. as per dot point 1 above) during wind conditions which meet the following conditions:
 - Wind direction from the south to south-west; and
 - Wind speeds above 2 metres per second (m/s).

The prescribed control measures have not been modelled as they are applied when required during adverse conditions. Implementation of roadway wet dust suppression as per the Level 1 guideline as



listed in *Emission Estimation Technique Manual for Mining Version 3.1* is expected to reduce the dust emission rates by 50% and in our opinion below the assessment criteria.

Additional modelling can be undertaken at the request of the client if required.

Point 2

The EPA requested additional information on the assumptions of the construction phase. Details around the construction timeframe and design capacity have been unclear and potentially contradicted in the EIS. Advitech understands the construction phase will be completed in 60 business days over a four month period. This allows the proponent to account for unexpected delays in construction. Modelling for the constructions phase has been completed for an entire calendar year.

The initial comments in the AQIA indicated a design capacity of 486,000 m³ for the proposed Cell 3 construction. The design capacity referred to the Cell 3 capacity for waste materials and did not reflect the amount of material required to be excavated. However we do not expect this assumption to significantly change the outcomes of the AQIA report.

The majority of the dust emissions from the landfill site are emitted by wind erosion, bulldozers and wheel generated dust from trucks. The modification of the design capacity assumption will not change the emission rates for these emission sources as they have been determined from the exposed land surface area and hours of vehicle usage.

Additional modelling can be undertaken at the request of the client if required.

Yours faithfully,



Patrick McGaw

Process Engineer
Advitech Pty Limited

Checked By: Dr Carl Fung - Lead Consultant - Process Engineering and Sustainability (CAQP)
Job No.: J0170005
Folder No.: F14804
Our Ref: 14804 Burra Road Air Quality EPA Response Rev0.docx



14 November 2017

610.16776 Burra Road - response to EPA feedback Nov 2017.docx

MH Earthmoving Pty Ltd
150 Sheridan Street
(PO Box 227)
Gundagai NSW 2722

Attention: Marty Hay

Dear Marty

Burra Rd Landfill, Gundagai Response to EPA Comments

SLR has read the letter from the NSW EPA regarding Development Application 242/2017, in relation to the Burra Road, Gundagai landfill expansion.

Summarised below are responses to the surface water and leachate management concerns highlighted in the letter.

EIS Surface Water Impact Assessment

Comment: Provide assessment of potential impacts of managed overflows from the leachate management system:

Identify and estimate the quantity of all pollutants that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation measures are implemented.

Response: The design of the leachate management system includes internal collection sumps and pipework within the proposed Cell 3 that directs leachate to the new leachate pond. The leachate pond has been appropriately sized, using the industry standard (and NSW EPA recommended) HELP (Hydraulic Evaluation of Landfill Performance) computer model, to capture 2 years of leachate without overflow. A conservative approach using the 90% rainfall has been adopted, hence there is likely to be well in excess of 2 years storage available. When the capacity of the pond is reached, leachate will be tankered off site. The *NSW EPA Environmental Guidelines: Solid Waste Landfills, second edition 2016*, does not specify the amount of leachate storage that should be allowed for, rather it states to allow for cumulative increases, based on all inputs and outputs (including tankering off site). Since there will be no managed overflow, and all leachate that is stored within the pond is afforded a suitably designed double lined containment system, it is not considered necessary to assess the environmental impacts.

Comment: Assessment of potential impacts of construction and operation stage stormwater discharges:

Identify and estimate the quantity of all pollutants that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation measures are implemented.

The proponent should characterise construction and operation stage stormwater discharges in terms of the concentrations and loads of pollutants and assess the potential impact on the receiving environment.

Response: It is possible to model pollutant generation rates and rates of removal from typical land-uses for pollutants such as TSS, TN and TP using the MUSIC software. However, this software does not predict pollutant loads for other pollutants such as metals, ammonia, etc. Typical concentrations for these other pollutants could be calibrated from existing water quality monitoring. Water quality objectives in the receiving environment can be determined from ANZECC 2000. Stormwater treatment measures can then be added which mitigate the impact such that the pollutant load (kg of pollutant per annum) is not increased, taking into account both the concentration and frequency of discharge. We suggest any further specific requirements in this regard be outlined by the NSW EPA so they can be addressed.

Comment: Water balance for the stormwater management system:

The proponent should assess the water balance for the stormwater management system, estimating the frequency and volumes of controlled discharges and managed overflows.

Response: It should be noted that the stormwater management system will only collect natural site dirty (sediment laden) water, and that industry practice is to treat stormwater runoff using sediment ponds. The *NSW EPA Environmental Guidelines: Solid Waste Landfills, second edition 2016* does not require a water balance for stormwater – it only requires a water balance for the leachate management system. It is therefore considered that a water balance is not required for the stormwater system.

However, the stormwater (sediment basin) has been designed in accordance with industry recognised *Managing Urban Stormwater: Soils and Construction Volume 1 (NSW Department of Housing, 2004)*. The sediment basins have been designed to capture and treat all sediment-laden runoff during a 90th-percentile 5-day rainfall event. They are sized with a settling volume such that the suspended solids settle out to a concentration of less than 50 milligrams/litre before the treated stormwater is discharged. Flocculants can be used if necessary to achieve the required water quality. The only inflow is sediment laden water and this should be free of contaminants associated with leachate.

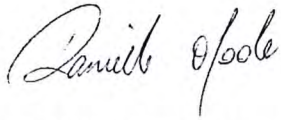
MHE fully expect that the water quality of controlled discharges from the sediment basin will be verified by water quality testing for compliance with EPL conditions.

Comment: Leachate management and disposal:

The leachate water balance should include both the existing and new leachate management systems, demonstrating both the existing and new leachate ponds will be managed to provide capacity to capture direct rainfall up to the 1 in 25 year 24 hour storm.

Response: SLR confirm that the water balance calculations already allows for both the existing leachate system servicing the current operation, and the addition of the proposed new leachate system for Cell 3. The attached water balance report shows that leachate ponds have sufficient capacity above normal operational water levels to contain the 1:25 year, 24 hour storm event stipulated. The proposed method of restoring capacity following heavy rainfall is to tanker leachate off site to an appropriately licensed facility. The rate and volume of leachate that may need to be tankered off site will depend on rainfall rate. Average rainfall may result in the pond reaching capacity after approximately 3 years, after which an average of 0.7 tankers per day would be required to maintain adequate capacity (based on a standard 10000 litre tanker). For an extreme 90% rainfall, the pond would reach capacity in 2 years and 5 months and if the extreme rainfall continued, 1.1 tankers per day would be required to maintain adequate capacity.

Yours sincerely



ivil) MSc Eng RPEQ

Technical Discipline Manager - Engineering

Checked/ Authorised by: PD
