ASSESSMENT REPORT

Section 75W Modification
Woodlawn Waste Management Facility
DA 31-02-99 MOD 3 and MP 10_0012 MOD 2

1. INTRODUCTION

This report assesses a modification request to modify Development Consent (DA 31-02-99) and Project Approval (MP 10_0012) for the Woodlawn Waste Management Facility (WWMF). The WWMF includes the Woodlawn Bioreactor (the Bioreactor) and Crisps Creek Intermodal Facility (Crisps Creek IMF). The Woodlawn Bioreactor is a putrescible waste landfill located within the Goulburn Mulwaree Local Government Area (LGA) and bordering the Queanbeyan-Palerang LGA.

The modification request was lodged by Veolia Environmental Services (Australia) Pty Ltd (the Proponent), pursuant to section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It seeks approval to construct and operate a Leachate Treatment Plant (LTP), provide additional leachate storage capacity, modify the regional waste requirements and align the hours of operation of the development consent and Project Approval. Leachate at the facility is being generated at a higher rate than anticipated, impacting on the effectiveness of landfill gas collection and causing odour impacts on the local community. The modification seeks to provide a long-term leachate management solution in order to reduce the odour impacts of the facility.

2. BACKGROUND

The Proponent operates the WWMF which is located approximately 40 kilometres (km) south of Goulburn and approximately 50 km north-east of Canberra (see **Figure 1**). The township of Tarago is approximately 15 km to the east of the site and Lake George is located approximately 10 km to the west.

The site has an area of 6,000 hectares (ha) and is surrounded by rural grazing land. The closest sensitive receiver to the site is located approximately 1.6 km away at 'Woodlawn Farm' which is owned and occupied by Veolia (see **Figure 2**). The nearest privately owned residence is located approximately 3.7 km away. The Proponent has operated the WWMF since September 2004.

Waste from Sydney is transferred via rail in containers to the Crisps Creek IMF and then placed on semi-trailers for transit to the Bioreactor. The Crisps Creek IMF is located 8 km east of the Bioreactor and approximately 2 km south of Tarago.

The Bioreactor is a putrescible waste landfill located in a former mine void (see **Figure 3**). The Bioreactor landfill as opposed to a conventional landfill has been designed to maximise the recovery of landfill gas (bio-gas). Optimal conditions for methane production are created through the controlled addition of moisture and recirculation of leachate. Methane is extracted from the Bioreactor using a landfill gas extraction system (a system of horizontal and vertical pipes) and converted to electricity via landfill gas generators through a transformer system. The electricity is then fed into an existing power grid on-site, and either used on-site or sold to the national electricity grid.

The subject site is shown in **Figure 1** and **Figure 2**, and an overview of the site and its operations is provided in **Figure 3**.

Figure 1: *Site Context*

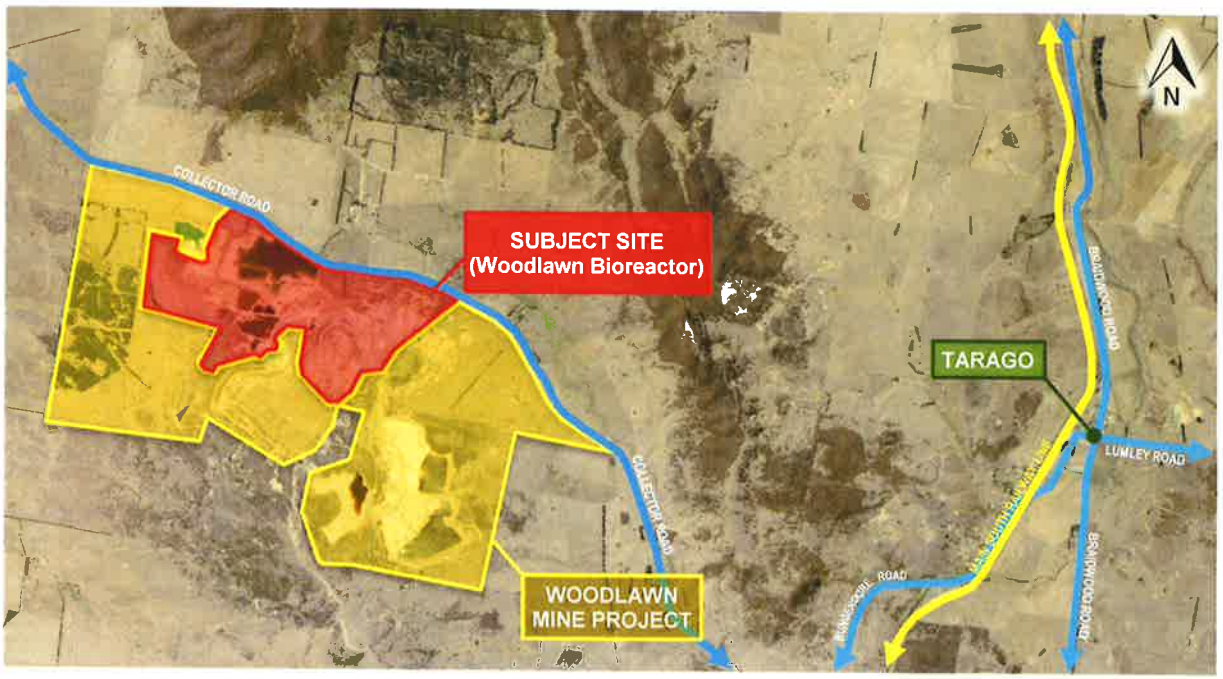

Figure 2: *Site Location*

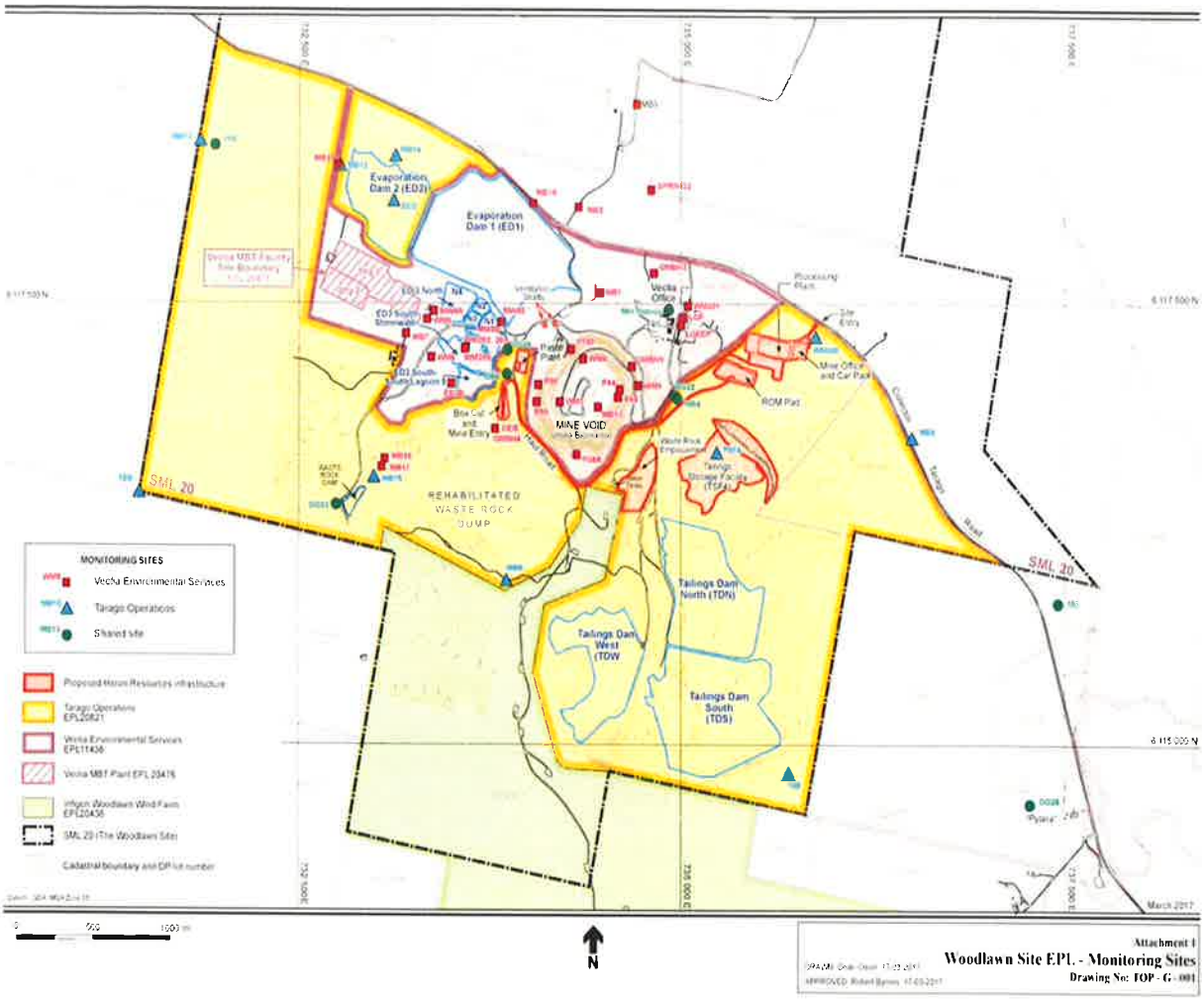

Figure 3: *Overview of Current Site Operations*

3. APPROVAL HISTORY

The Bioreactor operates under a development consent (DA 31-02-99) and Project Approval (MP 10_0012). DA 31-02-99 initially approved the WWMF, followed by MP 10_0012 which permitted an expansion to the facility.

3.1 Woodlawn Waste Management Facility (DA 31-02-99)

On 30 November 2000, the then Minister for Urban Affairs and Planning granted development consent (DA 31-02-99) to the Proponent for the construction and operation of the WWMF. The consent was granted following a Commission of Inquiry and includes the Bioreactor and Crisps Creek IMF. The consent allows for the receipt of up to 500,000 tonnes per annum (tpa) of putrescible waste, solely from Sydney. The development consent has been modified on two occasions as follows:

- MOD 1 was approved on 11 August 2010 by then Executive Director of Major Projects Assessment, as delegate of the Minister for Planning (DA 31-02-99 MOD 1) to receive up to 50,000 tpa of regional waste by road from LGAs within the vicinity of the facility
- MOD 2 was approved 9 September 2016 by the Acting Executive Director of Key Sites and Industry Assessments, as delegate of the Minister for Planning (DA 31-02-99 MOD 2) to include an interim leachate management measure by increasing the leachate storage capacity within Evaporation Dam 3 South-South (ED3S-S) as more leachate was being generated than anticipated resulting in odour impacts on the local community. However, the Department acknowledged that the measure was only an interim solution and required the implementation of a long term leachate management solution by 31 December 2017. The Proponent is unlikely to meet the 31 December 2017 deadline.

3.2 Woodlawn Waste Expansion Project (MP 10_0012)

On 16 March 2012, the Planning Assessment Commission (the Commission), as delegate of the Minister for Planning and Infrastructure, granted Project Approval (MP 10_0012) under Part 3A of the EP&A Act for the Woodlawn Waste Expansion Project, to allow an increase in the maximum input rate for the Bioreactor from 500,000 tpa to 1.13 Million tpa. The Commission did not permit DA 31-02-99 to be surrendered to ensure the obligation to rehabilitate the mine site was retained. As such, both development consents apply to the WWMF.

The Project Approval (MP 10_0012) has been modified on one occasion, on 9 September 2016 by the Acting Executive Director of Key Sites and Industry Assessments, as delegate of the Minister for Planning (MP 10_0012 MOD 1) to include an interim leachate management measure by increasing the leachate storage capacity within ED3S-S as more leachate was being generated than anticipated resulting in odour impacts on the local community. However, the Department acknowledged that the measure was only an interim solution and required the implementation of a long-term leachate management solution by 31 December 2017. The Proponent is unlikely to meet the 31 December 2017 deadline.

3.3 Other Approvals

The Proponent also holds a separate approval for an Alternative Waste Technology facility (MP 06_0239) at the site, which processes putrescible waste from the Crisps Creek IMF to produce compost, this facility was commissioned in early 2017 and is currently operating.

In July 2013, Heron were granted Project Approval (MP 07_0143) to reopen the underground Woodlawn Mine to extract and process 1.5 million tonnes of tailings near the western side of the Bioreactor. As such, the Proponent and Heron have a number of legal agreements in place in relation to land ownership and the functioning of the larger site. The intent is that both the Proponent and Heron would use Evaporation Dam 1 (ED1) and Evaporation Dam 2 (ED2) for their operations.

3.4 Existing Leachate, Stormwater and Odour Management System

Leachate from the Bioreactor is generated from groundwater inflow, stormwater and moisture within the putrescible waste. Leachate is extracted from the Bioreactor to optimise bio-gas generation and is reticulated back into the upper layers of the waste or considered surplus and stored within one of the on-site leachate storage dams.

Under the existing development consents and environment protection licence (EPL), the site is not permitted to discharge any leachate or stormwater off-site, as such the site is a zero-contaminated water discharge site.

The current leachate treatment system includes an activated sludge treatment process within a 12 megalitre (ML) leachate aeration dam where the leachate is treated and transferred to Evaporation Dam 3 North (ED3N) and ED3S-S for evaporation. ED3N is split into a series of dams to manage treated leachate. All dams within ED3 have a minimum freeboard of 0.5 m and are clay lined. **Figure 4** below shows the existing leachate and stormwater management system.

ED1 and ED2 were constructed between 1987 and 1991, the dams were used to store water from the previous mine workings (predominantly from stormwater) and mine dewatering. Since cessation of mining in 1998, the dams have continued to store mine stormwater which is slowly evaporating. The Proponent and Heron are both developing plans to store water in ED1 and ED2 to support their respective developments. As ED1 and ED2 were constructed over 25 years ago, the EPA were concerned the dams were leaking and required the Proponent to conduct an integrity assessment on ED1 and ED2 via a pollution reduction program (PRP). The findings of the integrity assessment are discussed in **Section 7**.

In summary, the dams on-site are managed as follows:

- ED1 (not shown on the **Figure 4**) stores stormwater from the sites disturbed areas and mine void stormwater from previous operations
- ED2 stores stormwater from ED3S and mine void stormwater from previous operations
- ED3S receives stormwater which is pumped from a series of stormwater dams and sumps located within the mine void
- ED3N stores treated leachate in a series of dams (ED3N-1, ED3N-2, ED3N-3 and ED3N-4)
- ED3S-S stores treated leachate (following approval in 2016).

The Proponent also uses evaporating units within ED3N to assist in the evaporation process.

The level of leachate within the Bioreactor is essentially linked to bio-gas capture and odour management. The Proponent has identified that the effectiveness of landfill gas capture is the primary management method for odour control. i.e as the bio-gas collection increases, the odour emissions are decreased. Leachate from the Bioreactor is currently being generated at a greater rate than expected which is impacting upon the effectiveness of the landfill gas collection and as such resulting in odour impacts.

The Proponent states the excess leachate has flooded the bio-gas collection system and some of the wells which were previously extracting bio-gas have either been restricted or rendered in-operative due to the leachate saturation.

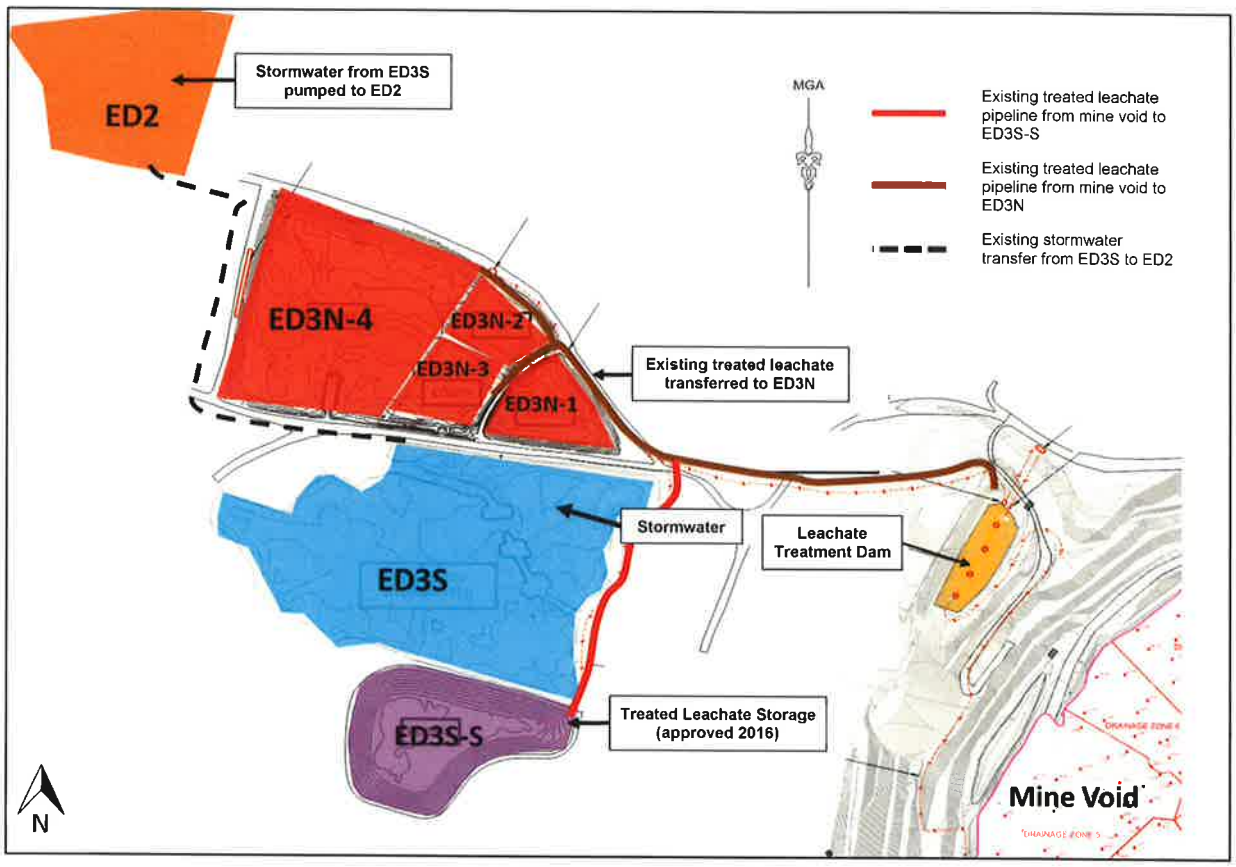

Figure 4: *Existing Treated Leachate and Stormwater Management System*

4. PROPOSED MODIFICATION

The Proponent has lodged a modification request under section 75W of the EP&A Act to modify development consent (DA 31-02-99) and Project Approval (MP 10_0012) for the WWMF at Collector Road, Tarago. In 2016 an interim leachate management strategy was approved which included increasing the extraction rates and storing treated leachate within ED3S-S. The interim strategy was expected to provide storage until September 2018. The Secretary required the Proponent to implement a long-term leachate management solution by 31 December 2017 to manage the ongoing leachate and odour issues from the Bioreactor. The facility is generating more leachate than anticipated and a long-term leachate management solution is required in order to adequately manage odour at the site. Accordingly, the modification seeks to provide a long-term leachate management solution and includes:

- construction and operation of a LTP and associated infrastructure to process leachate from the Bioreactor and treat it to a higher quality than the current leachate treatment system
- storage of the treated leachate in a purpose built 150 ML (4 ha) coffer dam within the southern portion of ED1
- evaporation of leachate within the existing leachate dams by 2020 so that once the coffer dam in ED1 reaches capacity, treated leachate can then be stored in the ED3 dams.

The Proponent has advised the proposed amendments, particularly the LTP, are necessary to improve the environmental and operational performance of the development and provide a long-term leachate solution as required by DA 31-02-99 MOD 2 and MP0_0012 MOD 1. The LTP would allow leachate to be treated, minimising the level of odour generated at the site. The Proponent has also indicated the proposed modification would facilitate more efficient bio-gas extraction, maximising the operational energy efficiency of the Bioreactor. The LTP and associated infrastructure are proposed to be located on a disturbed area of the site. The modification request included an integrity assessment of ED1 and ED2, two water balances and an odour modelling study (OMS). The proposed leachate management solution is shown in **Figure 5**.

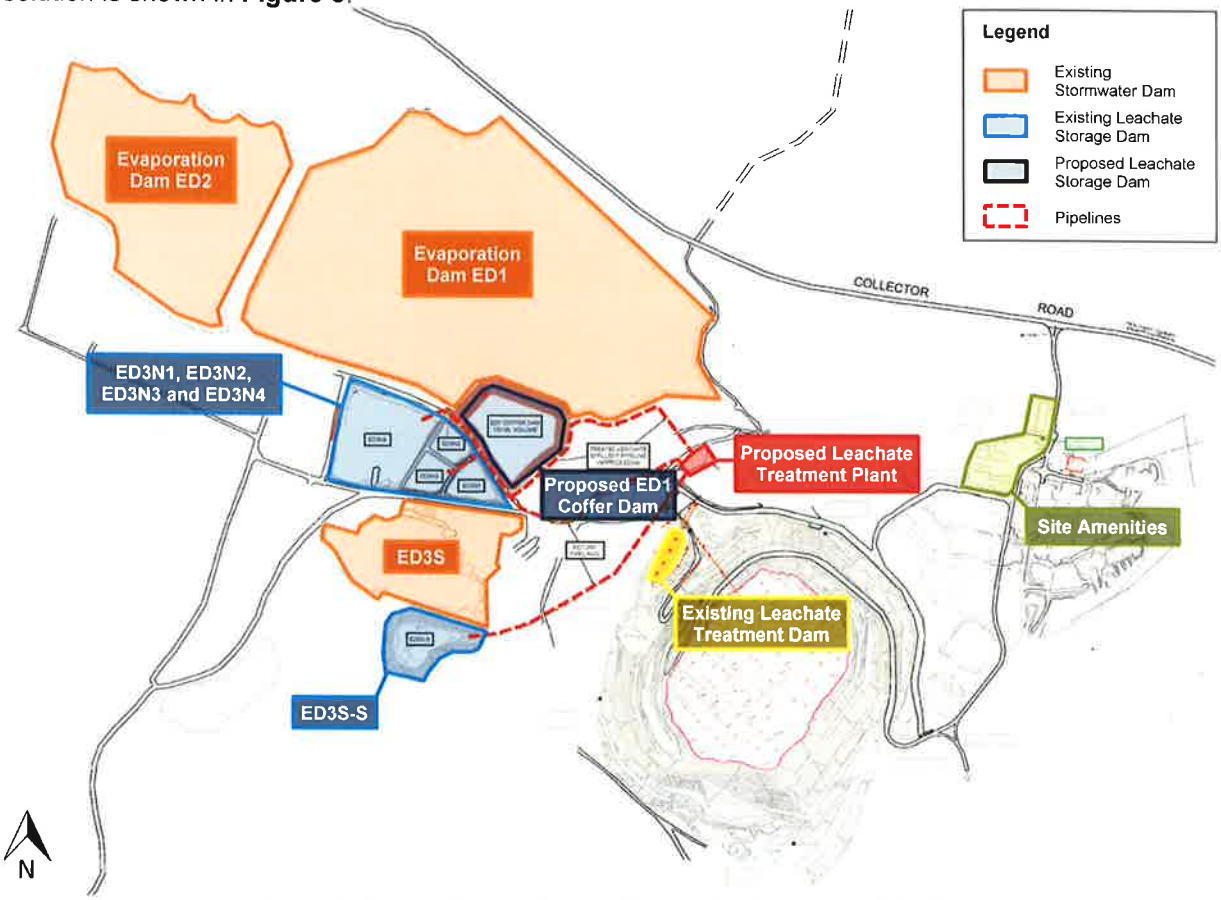

***Figure 5**: Proposed Leachate and Stormwater Management System*

In addition to the above, the Proponent is seeking to:

- remove the need for upfront approval from the Secretary for the receipt of regional waste above 50,000 tonnes per annum
- modify the operating hours stipulated in MP 10_0012 to ensure they are consistent with DA 31-02-99 to permit operations on public holidays other than Christmas and Good Friday.

The modification is described in full in the Environmental Assessment (EA) included in **Appendix B**. A detailed overview of the proposed modification is also provided in **Table 1**.

***Table 1:** Proposed Modification Components*

Description	Proposed Modification
LTP	The modification seeks to construct and operate a LTP on disturbed land between the Bioreactor and ED1 (see **Figure 7**). Overland pipelines would transfer raw leachate from the Bioreactor directly to the LTP. Once processed the treated leachate would be discharged via a pipeline to the coffer dam in ED1. The LTP would be capable of treating leachate at a rate of up to four litres per second from the Bioreactor.
Leachate Storage and Mechanical Evaporation	The Proponent proposes to store leachate in a purpose-built coffer dam in ED1. ED1 currently stores mine void water and stormwater. The Proponent also proposes to install evaporative devices to enhance the evaporation rates of treated leachate. Originally the Proponent did not propose to line the coffer dam in ED1.

Description	Proposed Modification
	The Proponent further proposes to install additional evaporators within ED3N-1, ED3N-2, ED3N-3 and ED3N-4 to empty these dams of leachate by 2022. Once these dams have been emptied and the coffer dam reaches capacity, treated leachate from the LTP would be stored in these dams. The modification proposes a number of water balance scenarios which include relying on Heron to extract water from ED1 and ED2 at certain rates during the expansion of Heron's mine.
LTP Implementation Timeframe	The Proponent requested the deadline to implement the long-term leachate management solution be extended from 31 December 2017 until 31 December 2018. The Proponent states the reason for the extension is due to delays associated land ownership of ED1 and ED2, re-modelling of the water balance and license issues between the Proponent and Heron.
Regional waste limit	The modification seeks to amend Schedule 3, Condition 6 of the Project Approval (MP 10_0012), to remove the requirement for the Proponent to obtain the Secretary's approval prior to receiving more than 50,000 tonnes of regional waste by road. The Proponent indicated this modification is required to improve its responsiveness to variations in regional waste capacity and demand, and to prevent unnecessary costs for the company, its customers and the Department.
Changes to the hours of operation	The modification seeks to amend Schedule 4, Condition 20 and Schedule 5, Condition 17 of the Project Approval (MP 10_0012), to align the facility's hours of operation with those stipulated within the original development consent (DA 31-02-99). Condition 97 of the original development consent permits operations on public holidays other than Christmas Day and Good Friday, whilst the Project Approval excludes all public holidays from the permitted hours of operation. The Proponent indicated this modification is required to allow it to accommodate the increased demand experienced for waste collection services during public holidays such as New Year's Day and Australia Day, and to ensure the facility is consistent with the operating hours of the Clyde and Banksmeadow Transfer Terminals, which feed into the WWMF.

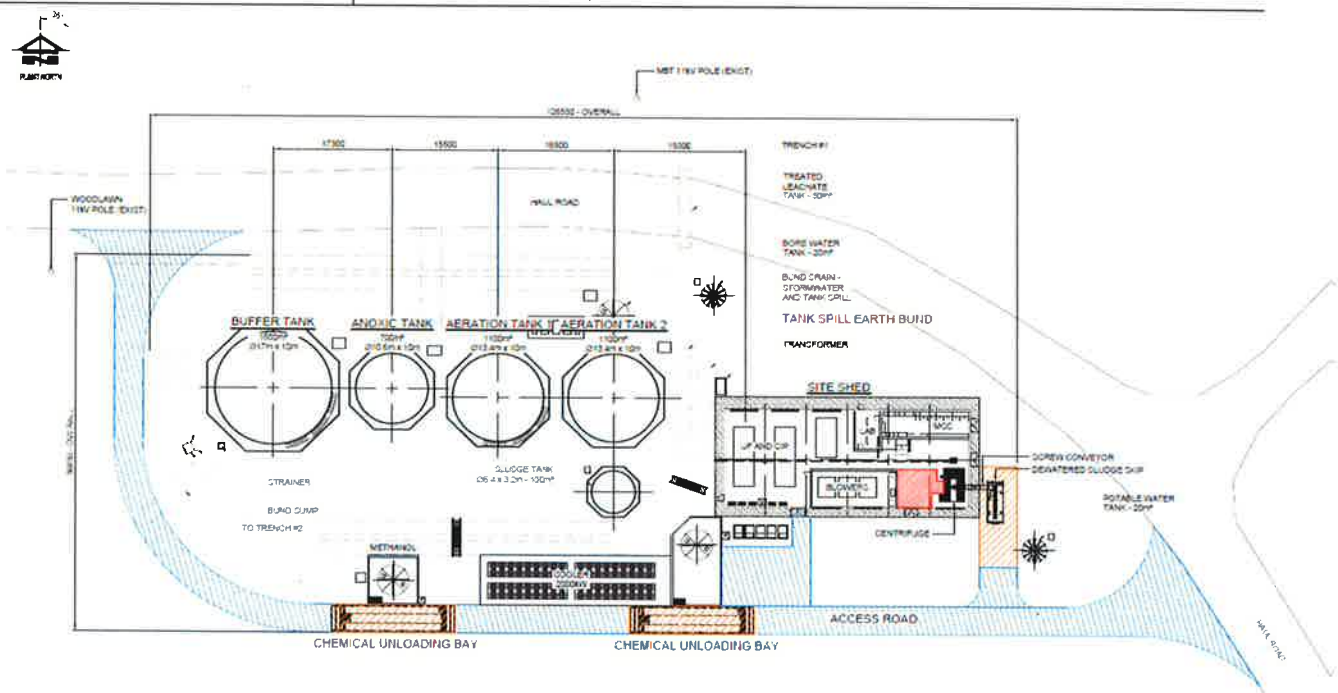

***Figure 6**: Proposed LTP*

4.1 Leachate Treatment

In 2015, the Proponent conducted a trial to determine the most appropriate form of leachate treatment. The trial included an assessment of a simulated sequencing batch reactor and a membrane bioreactor system. The trial identified that both systems were capable of removing biodegradable organic matter.

The membrane bioreactor system was the preferred LTP and is considered an advanced form of the traditional activated sludge process as it uses a biological membrane to capture solids instead of a gravitational settlement. The membrane bioreactor LTP relies on suspended bacteria in solution that transforms polluted matter into biomass and ammonia into nitrate. Biodegradable organic pollutants are reduced into insoluble compounds which are then removed via filtration.

The Proponent states a Supervisory Control Data Acquisition (SCADA) system would also be incorporated into the design of the LTP so that the LTP can be monitored and controlled by multiple staff.

5. SATUTORY CONTEXT

5.1 Approval Authority

The Minister for Planning is the approval authority for the request. Under the Minister's delegation of 11 October 2017, the Director, Industry Assessments, may determine the request under delegation as:

- the relevant local council has not made an objection
- a political disclosure statement has not been made
- there are no public submissions in the nature of objections.

5.2 Section 75W

The WWMF (DA 31-02-99) was originally approved under Part 4 of the EP&A Act, as State Significant Development under the Act. Under Clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000*, a development consent granted by the Minister for Planning under Part 4 of the EP&A Act relating to State Significant Development is to be modified under section 75W of the Act.

The WWMF expansion project (MP 10_0012) was originally approved under Part 3A of the EP&A Act. Although Part 3A was repealed on 1 October 2011, the projects remains a 'transitional Part 3A project' under Schedule 6A of the EP&A Act, and hence any modification to the approvals must be made under the former section 75W of the EP&A Act.

The Department is satisfied the proposed changes are within the scope of section 75W of the EP&A Act and do not constitute a new application. The Department notes that:

- the primary function and purpose of the approved project would not change as a result of the proposed modification
- the modification is of a scale that warrants the use of section 75W of the EP&A Act
- the overall approved capacity and introduction rates of putrescible waste would remain unchanged as a result of the proposed modification
- any potential environmental impacts would be appropriately managed through the existing or modified conditions of approval.

Therefore, the Department is satisfied the proposed modifications to the WWMF are within the scope of section 75W of the EP&A Act and do not constitute a new development application. Accordingly, the Department considers that the request should be assessed and determined under section 75W of the EP&A Act, rather than requiring a new development application to be lodged.

6. CONSULTATION

Under section 75W of the EP&A Act, the Department is not required to notify or exhibit the modification request. Notwithstanding, the request was made publicly available on the Department's website from 4 July 2017 until 25 July 2017.

The Department referred the application to Goulburn Mulwaree Council (GMC), Queanbeyan Palerang Regional Council (QPRC) and relevant government authorities. The Department also notified adjoining landowners and the Tarago and District Progress Association Incorporated (TADPAI).

Both GMC and QPRC did not provide a submission on the modification request.

The **Environment Protection Authority (EPA)** did not object to the modification. However, the EPA made the following comments:

- the coffer dam should be lined with high-density polyethylene (HDPE)
- the LTP must be capable of treating leachate continuously at 4 L/s including the measures that would be employed to maintain treatment capacity during maintenance periods

- the EPA does not support the reliance on Heron for water extraction and is of the view that the two operations should be managed separately
- the second water balance did not model dam levels from 2029 to 2058. The EPA requested this modelling be conducted
- the construction impacts of the new coffer dam should be provided
- as the transfer of water between ED1 and ED2 is proposed, ED2 should be considered part of the leachate treatment management strategy
- the rate of evaporation from the evaporators has not been clearly justified
- the OMS submitted does not consider odour impacts from treated leachate being stored within ED2
- the Proponent is unlikely to meet the December 2017 deadline to implement the long term leachate management solution.

Water NSW did not object to the modification. However, Water NSW raised the following concerns:

- request that any dam which stores leachate must be lined with a HPDE liner
- the water quality objectives of the LTP have not been identified
- additional leachate or stormwater stored in ED1 may increase the hydraulic head on the underlying aquifer and potentially increase seepage from ED1 and ED2
- treated leachate and stormwater in ED1 should be kept separate so heavy metals on the floor of ED1 are not remobilised
- reliance upon Heron to extract water from ED1 and ED2 should be avoided and contingency measures should be made available should Heron not be able to extract water at the predicted rates.

The **Department of Primary Industries (DPI)** did not object to the modification. However, DPI recommended:

- clarification be provided on how the integrity of ED1 and ED2 would be rectified as the Proponent precluded the recommendations of the integrity assessment report which recommended an HPDE liner be installed
- the monitoring network be expanded to provide greater coverage to inform the proposed ecological risk assessment

The **Office of Environment and Heritage** did not object to the modification, and noted:

- there are no Aboriginal cultural heritage sites currently recorded within the proposed LTP footprint, and is satisfied the Proponent will continue to apply all existing approval conditions relating to Aboriginal cultural heritage
- the LTP would not result in any impacts on flora and fauna.

The **South East Local Land Services** did not object to the modification, but recommended the Department consider the requirements of the *Biosecurity Act 2015 (NSW)* as part of its assessment of the proposed modification.

Roads and Maritime Services did not object to the modification, and notes the proposed modification would not adversely impact upon the function of the surrounding classified road network.

The **Geological Survey of NSW** did not object to the modification, and noted the proposed modification did not raise any concerns in relation to resource sterilisation.

There was one public submission from the **Tarago and District Progress Association Inc (TADPAI)**. TADPAI did not object to the modification. However, they raised concern with the request to remove the requirement to seek up front approval for the receipt of waste above 50,000 tpa by road.

In addition to the above, the Department raised concern with the assumptions in the water balance, the management of leachate in ED1 and the changes to the regional waste limits and the lack of contingencies proposed. The Department requested that the proposed coffer dam in ED1 be lined with a HPDE liner. The Department requested further information about the construction of the coffer dam and pipeline and requested further justification to the proposed changes to the regional waste limits.

6.1 Response to Submissions and Supplementary Information

On 9 October 2017, the Proponent provided a Response to Submissions (RTS) on the issues raised during the notification of the development (see **Appendix D**). The RTS included a revised water balance and the Proponent confirmed the following:

- the coffer dam in ED1 would be lined with a HPDE liner
- the proposed 150 ML coffer dam would be capable of storing leachate for four years, once the coffer dam reaches capacity treated leachate would be stored in ED3N. However, these predictions are based on Heron extracting treated leachate from the coffer dam at a rate of 2 L/s. Should Heron not be able to extract the treated leachate at the modelled rates than two additional coffer dams would be required as a contingency
- ED1 would be managed by the Proponent whilst ED2 would be managed by Heron and there would be no transfer of treated leachate between the two dams
- the LTP would be capable of processing leachate at a rate of 4 L/s
- mechanical evaporators would be installed at ED1
- mine void stormwater and treated leachate would be kept separate and would not interact
- the existing leachate treatment system would continue to operate at 2 L/s until the LTP is fully operational
- once the leachate in the void has been reduced to an acceptable level, leachate extraction would be reduced to 2 L/s and 3 L/s.

Following concern raised by the Department, the Proponent is no longer seeking approval to modify the regional waste limits.

The RTS was made publicly available on the Department's website and was provided to key agencies to consider whether it adequately addressed the issues raised. A summary of the agencies responses is provided below:

The **EPA** had the following comments:

- the deadline to implement the long-term leachate management solution be extended to September 2018 as this is the time at which ED3S-S is expected to reach capacity and further storage would be required
- the EPA maintained that modelling from 2029 to 2058 is required to demonstrate the evaporation dams will not overflow in the future
- the EPA supported the installation of the HPDE liner
- the EPA recommended the following conditions:
  - ED3N be emptied of effluent from the existing leachate treatment system by 31 December 2022
  - the volume of mine water stored in the norther part of ED1 should be evaporated to 10 ML by 31 December 2023
  - the ED1 coffer dam must not be permitted to exceed 80% capacity until either a new coffer dam has been constructed or ED3N has been emptied of partially treated leachate, had its liner assessed and if necessary repaired
  - the water balance be continually monitored and compared to the assumptions in the model to ensure any deficiencies can be identified.

Water NSW supported lining the coffer dam with a HPDE liner and requested the treated leachate and mine void stormwater in ED1 be kept separate.

DPI supported the coffer dam being lined with HPDE.

On 28 November 2017, the Proponent submitted a revised LTP layout plan (see **Figure 7**). In addition, on 12 December 2017, the Proponent submitted a revised Construction Environmental Management Plan (CEMP) which detailed how the construction impacts of the LTP, pipeline and coffer dam would be managed.

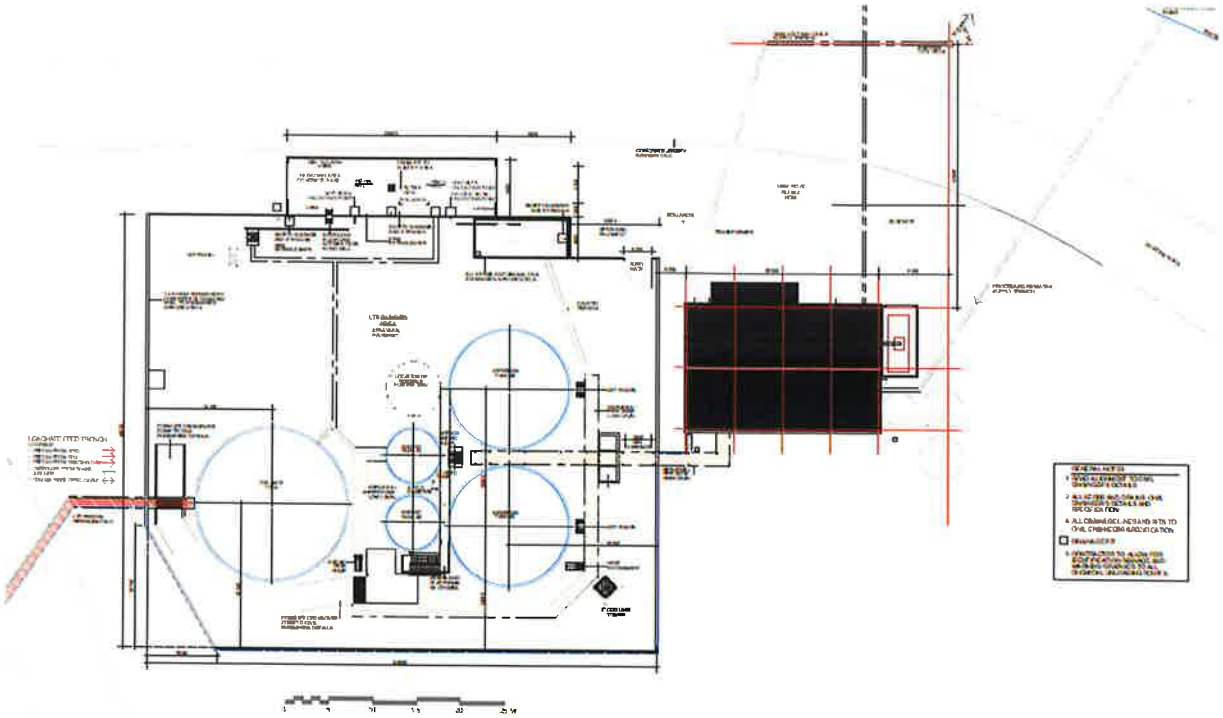

***Figure 7**: Revised LTP layout plan*

7. ASSESSMENT

The Department has assessed the merits of the proposed modification. During this assessment, the Department has considered the:

- EIS and assessment report for the original Part 4 application
- EA and assessment report for the original Part 3A application
- existing conditions of approval/consent (as modified)
- the EA supporting the proposed modification request (**Appendix B**)
- submissions from State government authorities and Council (**Appendix C**)
- the Proponent's response to issues raised in submissions (**Appendix D**)
- relevant environmental planning instruments, policies and guidelines
- requirements of the EP&A Act, including the objects of the EP&A Act.

The Department considers the key issues associated with the proposed modification are:

- surface water and leachate management
- odour.

All other issues are considered in **Table 3** below.

7.1 Surface Water and Leachate Management

The Bioreactor is approaching its capacity to appropriately manage leachate levels in the waste mass which has led to odour issues. Currently, leachate is extracted from the waste mass, treated to reduce odour impacts and then pumped to ED3N and ED3S-S for storage and evaporation. However, ED3N and ED3S-S are reaching storage capacity. The Proponent therefore seeks approval to provide additional leachate storage in a purpose-built coffer dam in ED1 and construct a LTP which would be capable of treating the leachate to a higher quality than the current leachate treatment system. In its RTS the Proponent provided a revised water balance prepared by WSP to address leachate and stormwater management. The Department considers there are three interconnected components of the long-term leachate management solution which should be assessed:

- leachate storage capacity
- dam integrity
- stormwater storage capacity.

These issues are discussed in more detail below.

Leachate Storage

The Proponent currently stores treated leachate in ED3N-1, ED3N-2, ED3N-3, ED3N-4 and ED3S-S. However, these dams are likely to reach capacity by September 2018 at which time further storage will be required. Any overflow of these dams has the potential to lead to contamination of stormwater and groundwater which is inconsistent with the sites zero contamination discharge requirements.

The revised water balance provided predictions for the next 10 years. However, the EPA requested the Proponent provide additional information to demonstrate the dams would not overflow during the period from 2029 to 2058 as it would provide a better indication of the long-term performance of the leachate storage. The Department agrees that this information needs to be provided to ensure leachate storage capacity is managed in the future. Therefore, the Department has recommended a condition that further modelling be conducted by the Proponent to ensure the dams would not overflow past 2029 and provide contingency measures should the modelling show otherwise.

To determine the size of ED1, the water balance modelled a number of scenarios including the use of different evaporators with varying evaporation rates and Heron extracting the treated leachate for its mine operations. The water balance concluded:

- one 150 ML dam would be able to provide capacity for four years if Heron extracts treated leachate at a rate of 2 L/s and four evaporators are used 70% of the time
- one and a half 150 ML dams would be able to provide capacity for four years if Heron does not extract treated leachate from the coffer dam and five evaporators are used for 70% of the time
- three 150 ML coffer dams would be required to provide capacity for four years if no evaporators are used and Heron does not extract any treated leachate from the coffer dam

The Proponent concludes one 150 ML coffer dam in ED1 is expected to provide sufficient capacity to store leachate for approximately four years. During this time, leachate stored in ED3N and ED3S-S would be evaporated with the assistance of mechanical evaporators. Once the coffer dam in ED1 starts to reach capacity, ED3N and ED3S-S would be almost empty at which time treated leachate could then be transferred from the LTP to ED3N to ED3S-S. These dams would provide storage for a further 4-5 years, after which the ED1 coffer dam would be utilised again. Therefore, the Proponent proposes to construct one 150 ML coffer dam in ED1. However, the Department notes the water balance is also dependent on Heron extracting treated leachate at a rate of 2 L/s from the coffer dam and certain evaporation rates.

Given the importance of the water balance to the long-term leachate management solution, the EPA requested the Proponent be required to continually monitor the performance of the water balance and leachate management system on the site and compare it to the predictions and assumptions made in the model. This is considered critical in identifying deficiencies in the model and detecting any future issues. The Department agrees with the EPA's request and has also recommended the Proponent provide contingency measures should leachate storage at the site become an issue.

The Department and the EPA support a long-term leachate management solution to alleviate the lack of leachate storage capacity at the site. The Department notes if additional leachate storage is not brought on-line soon, leachate extraction rates from the Bioreactor would decrease, potentially compromising the environmental performance of the site by increasing odour emissions and reducing bio-gas extraction rates. To ensure, the leachate from the void is extracted to a suitable level in a timely manner, the Department has recommended the LTP be capable of processing at least 4 L/s as requested by the EPA.

The Department, EPA and Water NSW raised concern with the Proponent's predictions which relied on Heron extracting treated leachate from the proposed coffer dam.

The Department acknowledges there is potential for the coffer dam in ED1 to reach capacity sooner than expected if:

- Heron does not extract treated leachate from the coffer dam at the assumed rates (2 L/s)
- the evaporators do not reach their assumed evaporating potential
- weather conditions increase the surface water in the Bioreactor and subsequently more leachate is generated than anticipated.

Due to the potential for one of the above scenarios to occur, the Department considers the Proponent should implement contingency measures like constructing additional coffer dams in ED1 in the event that one of the above scenarios occurs. Should additional storage capacity be required, the Proponent has indicated that the remaining mine water in ED1 would be evaporated down to 10 ML over a 10-year period and further leachate dams could be constructed in ED1. To ensure these contingency measures are available the Department has formalised the Proponent's commitment to evaporate ED1 to 10 ML over the next 10 years as a condition of approval, so that additional leachate storage can be made available should it be required. In addition, the water balance relies on ED3N being evaporated by 2023 so that it can be made available for treated leachate storage once ED1 reaches capacity. The Department has therefore recommended a condition which requires ED3N to be emptied by 2023. In addition, the Department considers there is sufficient capacity in ED1 for additional coffer dams to be constructed if needed. ED1 is approximately 47.6 ha in size and each 150 ML coffer dam would require approximately 4 ha, therefore there is sufficient capacity for three coffer dams to be constructed if required.

The Department notes the site is a zero-discharge site, which means no leachate can be discharged from the site. As a preventive measure, the Department has recommended a condition which does not permit the coffer dam to exceed 80% capacity until either a new coffer dam is built or ED3N is ready to accept treated leachate.

Subject to the recommended conditions of approval, the Department is satisfied that the proposed leachate storage solution is acceptable.

Dam Integrity

Seepage from the leachate and stormwater dams has the potential to impact on groundwater if not appropriately managed. The EPA's PRP required an integrity assessment of ED1 and ED2 to be conducted, the Proponent submitted the integrity assessment with the modification request as the Proponent is proposing to store treated leachate in ED1. The integrity assessment concluded:

- seepage from ED1 has migrated between 250 m to 450 m on-site since the dams were constructed
- seepage from ED2 has migrated 300 m to 900 m on-site since the dams were constructed
- a HPDE liner was recommended as the most effective method of reducing future seepage
- an ecological risk assessment was recommended to validate seepage from ED1 and ED2 and the impacts on the environment.

The Department, the EPA, Water NSW and DPI raised concern with the integrity of ED1 and ED2 which are known to be leaking. NSW Water raised concern that increased storage would increase hydraulic load which may increase the seepage rates.

In its RTS, the Proponent committed to lining the new coffer dam in ED1 with a HPDE liner to ensure seepage of treated leachate to groundwater does not occur. The Department, EPA and NSW Water support the coffer dam being lined with a HPDE liner. In addition, the EPA has recommended that the ED3N dams have their dam lining certified once emptied prior to treated leachate from the LTP being stored within these dams. Should the existing lining prove to be inadequate the Proponent would need to submit management options to rectify the inadequacies prior to treated leachate being stored in ED3N. The Department agrees that the integrity of ED3N must be certified prior to further treated leachate being stored in the dams and has recommended a condition to this effect.

Whilst the revised CEMP included details of how the LTP, pipeline and coffer dam would be constructed, the Proponent did not provide surveyed plans or a geotechnical investigation detailing how the proposed coffer dam would be engineered. As such, the Department has recommended:

- a condition which requires the new coffer dam to be designed and constructed by a suitably qualified and experienced person and the design be based on the recommendations of a geotechnical investigation
- the new coffer dam in ED1 be lined with a HPDE liner to the satisfaction of the EPA
- works as executed drawings be submitted to the Department, the EPA, Water NSW prior to treated leachate being stored in ED1.

In addition, to verify the HPDE liner is successful in minimising infiltration to groundwater, the Department has recommended the Proponent provide a quality assurance report. The Department has

also recommended that any future coffer dams that could potentially be used for additional leachate storage be appropriately lined to the satisfaction of the EPA. The Department has recommended conditions to ensure this occurs.

Following the Proponent's commitment to line the coffer dam, the Department is satisfied that the integrity of the coffer dam can be adequately managed.

Stormwater Storage

Managing the site's stormwater effectively is important to ensure stormwater and leachate are separated and the site remains a zero contaminated water discharge site. As per the existing arrangement, ED2 would continue to be used to store stormwater runoff captured from the dams and sumps within and around the mine void. ED1 currently stores mine water and stormwater. The sites existing water management system is designed to keep the stormwater runoff separate from the waste and leachate.

The Proponent's revised water balance predicts ED2 would continue to have sufficient capacity to store stormwater from the mine void without exceeding its maximum water level. During the wettest annual rainfall scenario the revised water balance predicts ED2 would reach capacity but not overflow. During drier conditions, the dam would not reach capacity.

Water NSW recommended that the mine void stormwater in ED1 and the treated leachate in the new coffer dam be kept separate to ensure contaminants are not mobilised. The Department agrees with Water NSW recommendation and has recommended a condition accordingly.

Based on the Proponent's water balance, the Department is satisfied ED2 has sufficient capacity to store mine void stormwater and stormwater from the site.

Conclusion

The Department is satisfied that leachate can be adequately managed at the site for the following reasons:

- the LTP is capable of treating leachate at 4 L/s as per the EPA's requirements
- further coffer dams can be accommodated in ED1 if required
- ED1 and ED3N would be evaporated to ensure further leachate storage capacity can be provided at these locations
- the coffer dam's performance would be continually monitored and verified against the predictions in the water balance to ensure any deficiencies are detected and resolved
- the site will continue to be maintained as a zero-discharge site
- the new coffer dam in ED1 will not be permitted to exceed 80% unless a new coffer dam has been constructed or parts of ED3N have been evaporated and its liner is acceptable to receive treated leachate
- the LTP would treat the leachate to a higher quality than the existing leachate treatment system
- the coffer dam will be lined with a HPDE liner to prevent seepage of treated leachate to groundwater
- the integrity of the liner will be tested prior to treated leachate being discharged to the new coffer dam
- ED2 has sufficient capacity to store stormwater from the mine void.

Overall, the Department supports the modification and considers it to be an appropriate step in adaptively managing the current shortfall in treated leachate and mine void stormwater storage capacity at the site.

7.2 Odour

The key odour issue associated with the proposal relates to the potential for increased odour emissions to be generated from the additional treated leachate storage in ED1. Additionally, if the leachate storage capacity is not increased at the site, leachate extraction levels would be significantly reduced which would potentially increase odour emissions from the mine void and impact on the local community. As required by the previous modification the Proponent is proposing a long-term leachate management solution which includes the construction and operation of the LTP to reduce the sites odour impacts. The LTP would treat the leachate to a higher quality than the current leachate treatment system which has the benefit of reducing odour impacts.

The facility receives regular complaints about odour from the local community. The Department notes

the amount of odour complaints in 2016 was 88 which is an increase of 30% from the previous year. This is likely linked to the performance of the bio-gas collection system and increased leachate levels in the Bioreactor. The EPA also has serious concerns about the current odour impacts and is supportive of a long-term leachate management solution which would assist in reducing the odour impacts on the local community.

Consequently, the Proponent has developed a target leachate treatment criteria, which would reduce organic loading and odour potential. A comparison of the existing leachate quality and the proposed leachate quality is provided in **Table 2**:

***Table 2**: Current vs Proposed Leachate Targets*

Parameters	Units	Existing leachate targets	Proposed leachate target
pH		> 6.5	6.5-7.5
Biological Oxygen Demand (BOD)	mg/L	300	<10
Ammonia	mg/L	Less than 1,500	<10
Chemical Oxygen Demand	mg/L	Not provided	<3,000
Conductivity	µS/cm	Not provided	<36,000
Total Suspended Solids	mg/L	Not provided	<5
Total Dissolved Solids	mg/L	Not provided	~30,000
Nitrate	mg/L	Not provided	<500
Total Phosphorus	mg/L	Not provided	<13
Chloride	mg/L	Not provided	<5,000

As shown in **Table 2** the LTP would significantly improve the quality of leachate especially in terms of BOD and ammonia and thereby reduce the odour impacts.

The modification request also included an Odour Modelling Study (OMS) prepared by the Odour Unit. The OMS was based on a worst-case scenario and assumed ED1 (47.6 ha) in its entirety would store treated leachate. However, the coffer dam footprint (4 ha) would be much smaller than the odour footprint assumed in the OMS. The OMS concluded that should all of ED1 store treated leachate, the odour criteria would be met at the closest sensitive receiver, given its distance from the site.

The EPA was satisfied with the conclusions of the OMS and did not raise any concerns in relation to the modelling or the leachate target criteria.

The Department notes the existing Project Approval includes several conditions which requires the Proponent to audit and report on odour emissions, including requirements to:

- undertake annual odour audits, including a review of odour complaints
- publicly report on action it proposes to take regarding the findings of odour audits
- report to the Department with a response to any recommendations contained in the audit report
- consult with TADPAI regarding the operations and progress towards improving the leachate management, gas extraction and odour issues at the site
- permit leachate that has been treated sufficiently to be discharged into the storage dams, thereby potentially reducing a potential odour source.

In addition, the Department notes the sites Environment Protection License No 11436 (issued by the EPA) manages the facility which includes monitoring requirements for a range of air quality pollutants. The Department is satisfied that any potential odour and air quality impacts associated with the proposed modification would be appropriately managed through the existing conditions of approval and EPL, which set strict operational limits and comprehensive monitoring, management and audit procedures.

The Department and the EPA support the implementation of the LTP to treat the leachate to a higher standard and believe it would assist in managing the odour and leachate impacts at the site. Overall, the Department is satisfied the proposed modification would not lead to any significant air quality impacts beyond those already assessed and approved, provided the sites' operations are managed appropriately to minimise odour generating sources and to maximise bio-gas extraction. The modification would improve the odour issues at the site and reduce the odour impacts on the local community.

7.3 Other Issues

The Department's assessment of other issues is provided in **Table 3**.

Table 3: *Assessment of Other Issues*

Issue	Assessment	Recommendation
Construction of the LTP	• On 12 December 2017, the Proponent provided a revised CEMP to address the construction impacts associated with the LTP, pipelines and proposed coffer dam. • The Department reviewed the CEMP and is satisfied that the construction impacts including noise, run-off and dust can be adequately managed via the revised CEMP, particularly as the nearest receiver is located 1.6 km away. • Both the EPA and NSW Water have reviewed the CEMP and are satisfied that the construction impacts can be adequately managed. • The Department has recommended that the Proponent construct the LTP and associated infrastructure in accordance with the CEMP and the National Construction Code (NCC)	Require the Proponent to: • construct the LTP and associated infrastructure in accordance with the CEMP and ensure the LTP is constructed in accordance with the NCC
Operational Management of the LTP	• The Proponent provided limited information in relation to the operational management of the LTP. • To operate the LTP methanol and sodium hydroxide are required, as such these chemicals are required to be stored on the site. • The Department raised concern regarding the amount of methanol and sodium hydroxide proposed to be stored on the site and requested a preliminary risk screening be conducted in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33). On 14 December 2017, the Proponent submitted a preliminary hazard assessment (PHA) to address SEPP 33. The PHA is based on a qualitative analysis which the Department considers acceptable for the proposed development. It identified the hazards for releases of methanol and sodium hydroxide with the associated control measures. The PHA also demonstrates that the methanol storage and dosing system is located at least 350 m away from the site boundary. In the event of methanol release and ignited, the heat radiation impact is unlikely extend offsite. Methanol is also classified as a toxic material. In the event of release, methanol vapour will react with sunlight and decompose to inert substances. Considering the proposed chemical storage area does not include any roof structures in the vicinity of methanol dosing systems and the methanol tank will be installed within a bund, the risk from toxic release is considered low and acceptable. • Based on the location, layout and the control measures of the proposed development, the Department considers the risks from the proposed development satisfies the risk criteria set out in HIPAP 4. Notwithstanding, the Department has recommended a condition requiring: - the emergency response plan be updated to include the storage of chemicals, - a safety management system be kept on-site - the chemicals to be stored in accordance with the relevant Australian Standards and the EPA's guidelines for storing and handling liquids. • In addition, to ensure the operational impacts of the LTP are adequately managed, the Department has recommended: - the existing leachate management plan be revised to include the operational details of the LTP - a leak detection system be installed on all pipelines which transfer treated leachate - the capacity of the largest LTP tank be bunded - the sludge skip bin be bunded and covered. • With the above measures in place, the Department is satisfied that the LTP can be adequately managed on the site.	Require the Proponent to: • the emergency response plan be updated to include the storage of chemicals • a safety management system be kept on-site • the chemicals to be stored in accordance with the relevant Australian Standards and EPA's guidelines for storing and handling liquids • the leachate management plan be revised to include the LTP • install a leak detection system on all pipelines which transfer treated leachate • bund the largest LTP tank • bund and cover the sludge skip bin.
Timeframe to implement the long-term leachate	• The conditions of approval currently require the Proponent to implement the long-term leachate management solution by 31 December 2017. However, due to land ownership issues with	Require the Proponent to: • implement the long-term leachate

Issue	Assessment	Recommendation
management solution	Heron, this deadline is not able to met. The Proponent has requested the deadline be extended to 31 December 2018. • The EPA has recommended the deadline be extended to September 2018, as the Proponent has sufficient leachate storage on-site until this time. The Department agrees with the EPA that September 2018 is a more suitable timeframe as after this point leachate storage is likely to become an issue. • Therefore, the Department has recommended the time frame to implement the long-term leachate management solution be extended to September 2017.	management solution by September 2018
Hours of Operation	• The modification seeks to amend Schedule 4, Condition 20 and Schedule 5, Condition 17 of the Project Approval (MP 10_0012), to align the facility's hours of operation with those stipulated within the original development consent (DA 31-02-99). • Condition 97 of the original development consent permits operations on public holidays other than Christmas Day and Good Friday, whilst the Project Approval excludes all public holidays from the permitted hours of operation. • The Proponent indicated this modification is required to allow it to accommodate the increased demand experienced for waste collection services during public holidays such as New Year's Day and Australia Day, and to ensure the facility is consistent with the operating hours of the Clyde and Banksmeadow Transfer Terminals, which feed into the Woodlawn facility. • The Department considers it appropriate that the operating hours of both consents be made consistent.	• N/A

8. CONCLUSION

The Department has assessed the proposed modification in accordance with the relevant requirements of the EP&A Act.

The Department and the EPA support the proposed long-term leachate management solution as it would alleviate the lack of leachate storage capacity at the site, decrease odour impacts on the local community and improve the bio-gas extraction rates at the site. The Department has recommended a number of conditions to ensure contingency measures are implemented in the event that more leachate storage is needed in the future. The Department considers the proposed modification is appropriate on the basis that it would:

- manage the current shortfall in treated leachate storage capacity
- allow leachate levels in the waste mass to be appropriately managed which would in turn minimise odour emissions and increase bio-gas extraction rates
- treat leachate to a higher quality than the existing leachate treatment solution
- meet the Department's and the EPA's previous requirements to provide a long-term leachate management solution to the leachate issue at the site

The Department considers the modification would improve the environmental and operational performance of the Bioreactor. Consequently, it is recommended the modification be approved subject to the recommended conditions.

9. RECOMMENDATION

It is recommended that the Director, Industry Assessments, as delegate for the Minister for Planning:

- consider the findings and recommendations of this report
- determine that the request MP 10_0012 MOD 2 falls within the scope of section 75W of the EP&A Act
- determine that the request DA 31-02-99 MOD 3 falls within the scope of section 75W of the EP&A Act
- Modify the approval MP 10_0012
- Modify the approval DA 31-02-99
- Sign the attached instruments of modification (**Appendix A**).

Recommended by:

19/12/17

Kate Masters
Senior Planning Officer
Industry Assessments

Endorsed by:

19/12/17

Kelly McNicol
Team Leader
Industry Assessments

DECISION

The recommendation is: Approved by:

22/12/17.

Chris Ritchie
Director
Industry Assessments
as delegate of the Minister for Planning

APPENDIX A – INSTRUMENTS OF MODIFICATION

Modification of Minister's Approval

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning, under the Instrument of Delegation executed on 11 October 2017, I approve the modification of the Development Consent referred to in Schedule 1, subject to the conditions outlined in Schedule 2.

Chris Ritchie
Director
Industry Assessments

Sydney 22 DECEMBER 2017

SCHEDULE 1

Development Consent (DA 31-02-99), granted by the then Minister for Urban Affairs and Planning on 30 November 2000 for the Woodlawn Waste Management Facility at 619 Collector Road, Tarago, in the Goulburn Mulwaree and Palerang local government areas.

SCHEDULE 2

This consent is modified as follows:

In Schedule 2: Conditions of Development Consent

1. Insert the following definitions in alphabetical order:

Coffer Dam	means coffer dam in ED1 as referred to in MOD 3
ED1	Evaporation Dam No. 1 as referred to in MOD 3 (the unlined portion of ED1)
LTP	Leachate Treatment Plant as referred to in MOD 3
ML	Megalitres
MOD 3	Modification Application titled *Modification of DA 31-02-99 and MP10_0012 for the construction of a leachate treatment plant and associated infrastructure and changes to regional waste limits and operating hours prepared* by SG Haddad Advisory and CW Strategic Planning Services, dated May 2017 and Response to Submissions dated October 2017

2. Delete the definition for "Water NSW" and insert the following definition in alphabetical order:

Water NSW	NSW manager and protector of the Sydney Drinking Water Catchment

3. Delete Condition 1 and replace with the following:

Adherence to Terms of DA and EIS

1. The Development shall be carried out in accordance with:
   (a) DA No. 31-02-99;
   (b) the EIS prepared by Woodward-Clyde Pty Ltd, dated February 1999;
   (c) the EIS Supplementary Report prepared by Woodward-Clyde Pty Ltd, dated March 1999;
   (d) the Amended DA and accompanying information prepared by Woodward-Clyde, dated 12 November 1999;
   (e) Modification Application DA31-02-99 Mod1 and accompanying Environmental Assessment titled "*Modification to DA31-02-99 to Receive Regional Council Waste at the Woodlawn Bioreactor*", prepared by Veolia Environmental Services, dated February 2010 and the associated '*Response to Submissions*' prepared by Veolia Environmental Services dated 12 April 2010;
   (f) Modification Application DA 31-02-99 MOD 2; and
   (g) Modification Application DA 31-02-99 MOD 3.

4. Delete Condition 18 and replace with the following:

Conditions Compliance Reports

18. The Applicant shall submit to the Secretary, the EPA, DPI Water, Water NSW and Council Conditions Compliance Reports as follows:
   (a) at least one month prior to the commencement of construction works for the purposes of landfilling, or within such period as otherwise agreed to by the Secretary;
   (b) at least one month prior to the commencement of construction works for the purposes of the intermodal transfer facility, or within such period as otherwise agreed to by the Secretary;
   (c) every two years following the date of commencement of construction for the purposes of landfilling activity, or within such period as otherwise agreed to by the Secretary.

Note: the requirements of (a) and (b) above may be satisfied by the same report if appropriate.

5. Delete Condition 19 and replace with the following:

Independent Environmental Audits

19. Every three years following the date of this consent, or at periods otherwise agreed to by the Secretary, and until such time as agreed to by the Secretary, the Applicant shall arrange for an independent audit of the environmental performance of the development. The audits shall:
   (a) be conducted pursuant to ISO 14010 – Guidelines and General Principles for Environmental Auditing, ISO 14011 – Procedures for Environmental Monitoring and any specifications of the Secretary;
   (b) be conducted by a suitably qualified independent person approved by the Secretary;
   (c) assess compliance with the requirements of this consent;
   (d) assess the implementation of the LEMPs and review the effectiveness of the environmental management of the development; and
   (e) be carried out at the Applicants' expense.

   The audits shall be submitted to the Secretary, the EPA, DPI Water, Water NSW, Council and the Community Liaison Committee.

   The Applicants shall comply with all reasonable requirements of the Secretary in respect of any measures arising from or recommended by the audits and within such time as agreed to be the Secretary.

6. Delete Condition 55 and replace with the following:

55. The Applicant shall prepare a Leachate Contingency Management Plan (LCMP) that addresses, but not necessarily be limited to the following matters:
   (a) the removal of leachate from the waste and its treatment to remove any metals or compounds at concentrations which may inhibit the biological processes of the bioreactor landfill, prior to discharging the leachate back into the landfilled waste;
   (b) the storage of leachate external to the landfilled waste in the mine void;

(c) method/s for removing leachate from the waste and disposing of it to ensure effective operation of the bioreactor landfill and to ensure that the groundwater gradient directs groundwater flows into the mine void;
(d) an estimate of the full costs for implementing each aspect of this plan *(EPA GTA)*;
(e) contingency measures in the event that the leachate storage dams reach capacity sooner than anticipated, this should include the provision for the construction and operation of additional lined coffer dams in ED1 to the satisfaction of the EPA; and
(f) contingency measures should the modelling as required by Condition 70G demonstrate that the dams will overflow.

7. Insert new conditions 55A and 55B immediately after Condition 55 as follows:

55A. Prior to operation of the LTP, or as otherwise agreed by the Secretary, the Applicant must submit a revised LCMP to the satisfaction of the Secretary. The LTP is not permitted to operate until the revised LCMP is approved by the Secretary. The plan must be prepared in consultation with the EPA and Water NSW and include contingency measures should the leachate dams fill sooner than anticipated.

55B. Should additional coffer dam(s) be required to be constructed as part of the LCMP the dam(s) must be designed constructed and maintained in accordance with Condition 70L to 70P.

8. Delete conditions 66A and 66B and replace with the following:

66A. Prior to the operation of the LTP or as otherwise agreed by the Secretary, the Applicant must submit a revised Stormwater Management Plan to the satisfaction of the Secretary. The plan must be prepared in consultation with the EPA and Water NSW and include the changes to stormwater management in MOD 2 and MOD 3, in accordance with the requirements of Condition 66.

66B. Prior to the operation of the LTP or as otherwise agreed by the Secretary, the Applicant must submit a revised Management Plan for ED3N, ED3S, ED3S-S and the Coffer Dam to the satisfaction of the Secretary. The LTP is not permitted to operate until the revised management plan is approved by the Secretary The plan must be prepared in consultation with the EPA and Water NSW and include the changes to water and leachate management in MOD 2 and MOD 3, in accordance with the requirements of Condition 70. The plan must be documented in the LEMP.

9. Insert new Condition 66C immediately after Condition 66B as follows:

66C. Should any additional coffer dams in ED1 be required, the Applicant must submit revised management plans in accordance with conditions 70 and 70B to the satisfaction of the Secretary prior to any treated leachate being discharged to the coffer dams. The plans must be prepared in consultation with the EPA and Water NSW and be documented in the LEMP.

10. Delete Condition 70 and replace with the following:

ED3N, ED3S and ED3S-S and Coffer Dam(s) – Management

70. The Applicant must prepare a management plan for ED3N, ED3S, ED3S-S and coffer dam(s), ED1, the LTP and pipeline to ensure that:
(a) each dam is lined in consultation with Water NSW and to the satisfaction of the EPA and maintained to prevent leakage from the dams in order to protect groundwater and surface water;
(b) a monitoring and inspection program is implemented including installation of monitoring bores, a review of monitoring data and six-monthly inspections to evaluate the integrity of the barrier and to assess if leakage from the dam is occurring;
(c) adequate capacity is retained in ED3N, ED3S and coffer dam(s) to meet the environmental performance requirements in condition 58;
(d) measures are identified to maintain adequate capacity within a suitable time period after receiving water from a rainfall event;
(e) there is an emergency plan for the management of leachate in excess of the capacity of ED3N, ED3S and coffer dam(s);
(f) the sources of leachate that are collected or received in ED3N, ED3S and coffer dam(s) are identified;
(g) the quantity of leachate from each source that reports to ED3 is monitored and compared in graphical format with rainfall data;
(h) ED3N is emptied of effluent from the existing leachate system by 31 December 2022;
(i) all pipelines which transfer leachate and treated leachate are monitored to ensure leaks do not occur;
(j) the operational details of the LTP include:

(i) the leachate quality targets;
(ii) a description of the performance indicators that would be used to judge the performance of the LTP;
(iii) a description of the management measures that would be implemented to manage the operational impacts of the LTP including the chemical storage area and sludge skip bin;
(iv) contingency measures to manage any unpredicted impacts such as the bioreactor membrane failing; and
(v) the roles, responsibility, authority and accountability of all key personnel involved in the environmental management of the LTP.

(k) An updated plan including MOD 2 and MOD 3 and must be documented in the LEMP.

11. Insert the following note after Condition 70C:

Note: Conditions pertaining to ED2 will be triggered only in the event of transfer of water from ED3S to ED2.

12. In Condition 70D, delete the word "Proponent" and replace with the word "Applicant".

13. Delete Condition 70F and replace with the following:

70F. The Long-term Leachate Management Strategy must be operational no later than 30 September 2018 or as otherwise agreed by the Secretary.

14. Insert the following new conditions after Condition 70F:

Future Modelling

70G. Prior to the operation of the LTP, the Applicant must provide modelling which demonstrates that the evaporation dams will not overflow for the period between 2029 to 2058. Should overflow be predicted, the Applicant must provide contingency measures in accordance with Condition 55A.

Leachate Treatment Plant

70H. The Applicant must construct the Leachate Treatment Plant (LTP) and associated infrastructure in accordance with the Construction Environment Management Plan prepared by Veolia dated 12 December 2017.

70I. All run-off during construction must be contained on the site in accordance with Condition 58.

70J. The LTP must be:
(a) capable of processing at least 4 litres per second of leachate; and
(b) bunded to contain 110 % of the facilities largest sized tank.

70K. The sludge skip bin must be bunded and covered to prevent contaminants entering surface water.

Coffer Dam(s)

70L. Treated leachate must not be discharged to any part of ED1, other than within lined coffer dam(s).

70M. The coffer dam(s) in ED1 must be designed and constructed:
(a) by a suitably qualified and experienced person(s);
(b) based on a geotechnical investigation and any recommendations prepared by a suitable qualified person(s); and
(c) ensuring that all coffer dams are lined with a High Density Polyethylene liner to the satisfaction of the EPA and in consultation with Water NSW.

70N. The Applicant must provide works-as-executed drawings signed by a registered surveyor demonstrating that the coffer dam(s) have been constructed in accordance with the design required by Condition 70M. The Applicant must submit the works-as-executed drawings to the EPA, Water NSW and Secretary prior to the discharge of treated leachate into the coffer dam(s).

70O. Prior to the discharge of treated leachate into any coffer dam(s) in ED1, the Applicant must confirm in writing and provide a quality assurance report to the EPA, Water NSW and the Secretary that the High Density Polyethylene dam lining has been adequately installed. From the commencement of discharge of treated leachate into the coffer dam(s), the Applicant shall provide quarterly updates to the EPA, Water NSW and the Secretary of the leachate volume in the coffer dam(s) and the remaining leachate storage volume.

70P. Prior to the discharge of treated leachate to any coffer dam(s), the Applicant must install a leak detection system which monitors flows along all pipelines which carry leachate. Any leaks must be investigated, contained and rectified.

70Q. Only treated leachate from the LTP is permitted to be stored within coffer dam(s) in ED1, unless otherwise agreed to by the Secretary.

70R. The coffer dam(s) are not permitted to exceed 80 per cent capacity until either:
(a) a new coffer dam has been designed and constructed in accordance with condition 70M to 70P and is ready to accept treated leachate from the LTP and a revised management plan has been submitted to the satisfaction of the Secretary in accordance with Condition 70; or
(b) sections of ED3N have been emptied of partially treated leachate, had its liner assessed and, if necessary, repaired, and is capable of receiving treated leachate from the LTP.

70S. No interaction between the treated leachate in the coffer dam(s) and the mine stormwater in ED1 is permitted.

70T. Within six months of commissioning the LTP and annually thereafter, unless otherwise agreed to by the Secretary, the Applicant shall commission and pay the full cost of an independent assessment of the leachate and water management system. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary. During the audit, this expert must:
(a) consult with the EPA, Water NSW and the Secretary;
(b) assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include:
  (i) actual versus predicted inputs and outputs into and out of each dam;
  (ii) actual versus predicted mechanical evaporation from each dam;
  (iii) actual versus predicted rainfall and evaporation; and
  (iv) the actual versus predicted volume of water or treated leachate stored in each dam.
(c) assess actual versus predicted performance of the LTP. This must include:
  (i) actual versus target effluent quality; and
  (ii) actual versus target throughput.
(d) determine whether the leachate and water management system is achieving its intended objectives; and
(e) outline all reasonable and feasible measures that may be required to improve water and leachate management at the site.

ED1

70U. The volume of mine water stored in ED1 must be no more than 10 ML by 31 December 2023.

ED3N

70V. ED3N must be emptied of effluent from the existing leachate system by 31 December 2022.

70W. Prior to discharging treated leachate into sections of ED3N from the LTP, the Applicant must verify the integrity of the dam and prepare an integrity assessment of the ED3N liner to demonstrate the dam is not leaking and is suitable for the storage of treated leachate.

70X. Should the integrity assessment identified in Condition 70W find that the liner in ED3N is not adequate for treated leachate storage, the Applicant must submit management options to the Secretary, the EPA and Water NSW which will be adopted to rectify any integrity issues.

70Y. The Applicant must not store treated leachate from the LTP in ED3N until the Secretary and the EPA are satisfied that either ED3N is not leaking or the management options identified in Condition 70X are acceptable.

15. Delete Condition 131(a) and replace with the following:

(a) location of bore holes around the perimeter of the mine void, ED3 and the coffer dam(s) including the depth at which they are screened to enable access of groundwater;

16. Delete Condition 132 and replace with the following:

Surface Water Monitoring

132. The Applicant shall prepare and implement a surface water-monitoring program to monitor the environmental performance of the construction, operation and rehabilitation of the development on surface water. The surface water-monitoring program must be documented in the LEMP.

Note: The specific requirements of the monitoring program will be stipulated in the EPL.

The program must include details on:

(a) Monitoring locations including:
  (i) Crisps Creek;
  (ii) Allianoyonyiga Creek;
  (iii) coffer dam(s);
  (iv) ED1;
  (v) ED3N;
  (vi) ED3S;
  (vii) ED3S-S;
  (viii) ED2;
  (ix) Downstream receiving waters of ED2;
  (x) All treated leachate effluent discharge lines;
  (xi) Discharge line from ED3S to ED2;
  (xii) rainwater collected in the mine void;
(b) monitoring methodologies and standards to be employed;
(c) monitoring frequency based on rainfall events and creek flow assessment;
(d) an assessment of the contribution of surface water pollution from the Woodlawn Waste Management Facility as distinct from the Woodlawn Mine site;
(e) the quantity of water relocated from the mine void into ED3;
(f) the quantity of water relocated from ED3 into the mine void;
(g) the chemical composition of liquids added to the landfilled waste;
(h) the chemical composition of treated leachate in the effluent discharge line and the coffer dam;
(i) the chemical composition of leachate within ED3S-S;
(j) the quantity of water that reports to ED3, including its sources;
(k) the quantity of water removed and/or discharged from ED3, including its destination;
(l) the total quantity of water contained in ED3;
(m) the quantity of water transferred from ED3S into ED2;
(n) the quantity of water that reports to ED2 from Woodlawn Waste Management Facility, including its sources;
(o) the total quantity of water contained in ED2;
(p) the total quantity of treated leachate contained in the coffer dam(s);
(q) the total quantity of water contained in ED1;
(r) the parameters and substances that are proposed to be monitored, including sampling and analysis frequencies;
(s) reporting and assessment of results; and
(t) opportunities to integrate the monitoring program with other monitoring programs in the vicinity.

Notes: The EPA will require a broader range of elements and compounds to be monitored for a short period, prior to waste being received at the site. This comprehensive monitoring will then be required to be conducted on an annual basis.

The monitoring of ED3 will initially be at weekly intervals and will be reviewed 12 months after commencement of landfilling operations.

The Monitoring of ED2 will initially be at weekly intervals once the transfer of stormwater from ED3S to ED2 has commenced and will be reviewed 12 months after commencement of MOD 2.

Conditions pertaining to ED2 will be triggered only in the event of transfer of water from ED3S to ED2.

17. Delete conditions 159 and 159A and replace with the following:

159. In relation to matters identified in Condition 158, as part of the LEMP, the Applicant must prepare an Emergency Management Plan. The Plan shall address, but not necessarily be limited to:
(a) identification of threats to the environment and/or public health that could arise in relation to the construction and operation of Waste Management Facility and Intermodal Facility including the

transportation of waste. These threats may include fire (waste transportation or within the landfill), overflow, dam failure, power or other utility failure, natural disaster etc;

(b) identification of strategies to minimise and ameliorate the effects of any groundwater surface water pollution identified from the groundwater and surface water monitoring programs;
(c) an estimate of the cost of implementation;
(d) actions to effectively respond to the disruption of operations so the risk of pollution is minimised;
(e) a communications strategy for alerting relevant agencies and the potentially affected community in the event of the disruption to operations leading to significant pollution;
(f) ensuring that all relevant employees are familiar with the emergency management plan; and
(g) any chemical storage required to operate the LTP and be consistent with the Department of Planning and Environment's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'.

The Applicant should regularly review the adequacy of the plan obtaining expert advice as required.

Note: When developing this emergency plan, opportunities may exist to integrate with the Woodlawn Mine site emergency management plans.

159A. Prior to the operation of the LTP, or within such further period as the Secretary may agree, the Applicant shall prepare and submit a revised Emergency Management Plan to the Secretary for approval. The plan shall include the site changes in MOD 2 and MOD 3, in accordance with the requirements of Condition 159.

18. Insert new conditions 159B and 159C immediately after Condition 159A as follows:

Safety Management System

159B. A comprehensive Safety Management System, covering all on-site operations and associated transport activities involving hazardous materials. Records from the Safety Management System must be kept on-site and must be available for inspection by the Secretary upon request. The Safety Management System shall be consistent with the Department of Planning and Environment's Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'.

Chemical Storage

159C. The Applicant must store all chemicals, fuels and oils used on-site in accordance with:
(a) the requirements of all relevant Australian Standards; and
(b) the NSW EPA's '*Storing and Handling of Liquids: Environmental Protection – Participants Handbook*' if the chemicals are liquids.

In the event of an inconsistency between the requirements listed from (a) to (b) above, the most stringent requirement must prevail to the extent of the inconsistency.

Modification of Minister's Approval

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning, under the Instrument of Delegation executed on 11 October 2017, I approve the modification of the Project Approval referred to in Schedule 1, subject to the conditions outlined in Schedule 2.

Chris Ritchie
Director
Industry Assessments

Sydney 22 DECEMBER 2017

SCHEDULE 1

Project Approval (MP 10_0012), granted by the Planning Assessment Commission on 16 March 2012 for the Woodlawn Waste Expansion Project at 619 Collector Road, Tarago, in the Goulburn Mulwaree and Palerang local government areas.

SCHEDULE 2

This approval is modified as follows:

1. Insert the following definitions in alphabetical order:

Coffer Dam	means coffer dam(s) in ED1 as referred to in MOD 3
ED1	Evaporation Dam No. 1 as referred to in MOD 3 (the unlined portion of ED1)
EPL	Environment Protection Licence
LTP	Leachate Treatment Plant
ML	Megalitre
MOD 2	Modification Application titled *Modification of DA 31-02-99 and MP10_0012 for the construction of a leachate treatment plant and associated infrastructure and changes to regional waste limits and operating hours prepared* by SG Haddad Advisory and CW Strategic Planning Services, dated May 2017 and Response to Submissions dated October 2017

2. Delete all references to "Water-NSW" and replace with "Water NSW".

3. Delete the definition of "Water NSW" and insert the following definition in alphabetical order:

Water NSW	NSW manager and protector of the Sydney Drinking Water Catchment

In Schedule 3: Administrative Conditions

4. Delete Condition 2 and replace with the following:

2. The Proponent shall carry out the Project generally in accordance with the:
   (a) EA;
   (b) statement of commitments (see Appendix 1);

(c) site layout plans and drawings in the EA (see Appendix 2);
(d) Modification Application MP 10_0012 MOD 1;
(e) Modification Application MP10_0012 MOD 2; and
(f) conditions of this approval.

5. Delete conditions 17 and 17A and replace with the following:

Soil and Water Management Plan

17. The Proponent shall prepare and implement a Soil & Water Management Plan for the Landfill to the satisfaction of the Secretary. This plan must:
(a) be prepared in consultation with EPA, Water NSW and DPI Water by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;
(b) be approved by the Secretary prior to the commencement of expanded operations;
(c) must specifically consider soil and water management (including leachate management) at the Landfill and ED3N, ED3S, ED3S-S, ED2, coffer dam(s) and ED1;
(d) include a water balance for the project;
(e) include a surface water monitoring program;
(f) include a groundwater monitoring program; and
(g) ensure that suitable measures are implemented to minimise water use, control soil erosion, prevent groundwater contamination, and comply with any surface water discharge limits.

This plan must be documented in the Landfill EMP (see Condition 3 in Schedule 7).

17A. The Proponent shall update the Soil and Water Management Plan for the landfill by including the proposed changes to water and leachate management in MOD 1 and MOD 2. The Plan shall be prepared in accordance with the requirements of Condition 17, in consultation with Water NSW and the EPA and to the satisfaction of the Secretary. Prior to the operations of the LTP or as otherwise agreed by the Secretary, the Proponent must submit a Soil and Water Management Plan to the satisfaction of the Secretary.

6. Delete conditions 18 and 18A and replace with the following:

Leachate Management

18. The Proponent shall prepare and implement a Leachate Management Plan for the Landfill to the satisfaction of the Secretary. This plan must:
(a) be prepared in consultation with EPA, Water NSW and DPI Water by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;
(b) be approved by Secretary prior to the commencement of expanded operations;
(c) describe in the detail the leachate barrier system installed on site;
(d) detail measures to collect and store all leachate generated by the landfill;
(e) detail measures to prevent leachate from escaping to surface water, groundwater or the surrounding subsoils;
(f) ensure all surface water from areas not subject to waste disposal or leachate disposal is directed away from the leachate management system;
(g) treat all water that has entered areas filled with waste, or been contaminated by leachate, as leachate;
(h) detail the management measures for the LTP, pipeline and coffer dam(s); and
(i) detail how the LTP would be managed during an emergency or system failure.

This plan must be documented in the Landfill EMP (see Condition 3 in Schedule 7).

18A. The Proponent shall update the Leachate Management Plan for the landfill by including the proposed changes to the leachate management in MOD 1 and MOD 2. The Plan shall be prepared in accordance with the requirements of Condition 18, in consultation with Water NSW and the EPA and to the satisfaction of the Secretary. Prior to the operation of the LTP or as otherwise agreed by the Secretary, the Proponent must submit a revised Leachate Management Plan to the satisfaction of the Secretary.

7. Insert the following new Condition 18AA after Condition 18A as follows:

Coffer Dam(s)

18AA. Should any additional coffer dams in ED1 be required, the Applicant must submit revised management plans in accordance with conditions 17 and 18 to the satisfaction of the Secretary prior to any treated

leachate being discharged to the coffer dams. The plans must be prepared in consultation with the EPA and Water NSW and be documented in the Landfill LEMP.

8. Delete Condition 18E and replace with the following:

18E. The Long-term Leachate Management Strategy must be operational no later than 30 September 2018 or as otherwise agreed by the Secretary.

9. Insert the following new conditions after Condition 18E:

Leachate Treatment Plant

18F. The Proponent must construct the Leachate Treatment Plant (LTP) and associated infrastructure in accordance with the Construction Environment Management Plan prepared by Veolia dated 12 December 2017.

18G. All run-off during construction must be contained on the site, no discharges off-site are permitted.

18H. The LTP must be:
(a) capable of processing at least 4 litres per second of leachate; and
(b) bunded to contain 110 % of the facilities largest sized tank.

18I. The sludge skip bin must be bunded and covered to prevent contaminants entering surface water.

Coffer Dam(s)

18J. Treated leachate must not be discharged to any part of ED1, other than within lined coffer dam(s).

18K. The coffer dam(s) in ED1 must be designed and constructed:
(a) by a suitably qualified and experienced person(s);
(b) based on a geotechnical investigation and any recommendations prepared by a suitable qualified person(s); and
(c) ensuring that all coffer dams are lined with a High Density Polyethylene liner to the satisfaction of the EPA and in consultation with Water NSW.

18L. The Proponent must provide works-as-executed drawings signed by a registered surveyor demonstrating that the coffer dam(s) have been constructed in accordance with the design required by Condition 18K. The Proponent must submit the works-as-executed drawings to the EPA, Water NSW and Secretary prior to the discharge of treated leachate into the coffer dam(s).

18M. Prior to the discharge of treated leachate into any coffer dam(s) in ED1, the Proponent must confirm in writing and provide a quality assurance report to the EPA, Water NSW and the Secretary that the High Density Polyethylene dam lining has been adequately installed. From the commencement of discharge of treated leachate into the coffer dam(s), the Proponent shall provide quarterly updates to the EPA, Water NSW and the Secretary of the leachate volume in the coffer dam(s) and the remaining leachate storage volume.

18N. Prior to the discharge of treated leachate to any coffer dam(s), the Proponent must install a leak detection system which monitors flows along all pipelines which carry leachate. Any leaks must be investigated, contained and rectified.

18O. Only treated leachate from the LTP is permitted to be stored within coffer dam(s) in ED1 unless otherwise agreed to by the Secretary.

18P. The coffer dam(s) are not permitted to exceed 80 per cent capacity until either:
(a) a new coffer dam has been designed and constructed in accordance with condition 18K to 18N and is ready to accept treated leachate from the LTP and a revised management plan has been submitted to the satisfaction of the Secretary in accordance with Condition 17 and 18; or
(b) sections of ED3N have been emptied of partially treated leachate, had its liner assessed and, if necessary, repaired, and is capable of receiving treated leachate from the LTP.

18Q. No interaction between the treated leachate in the coffer dam(s) and the mine stormwater in ED1 is permitted.

18R. Within six months of commissioning the LTP and annually thereafter, unless otherwise agreed to by the Secretary, the Proponent shall commission and pay the full cost of an independent assessment of the leachate and water management system. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary. During the audit, this expert must:
(a) consult with the EPA, Water NSW and the Secretary;

(b) assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include:
  (i) actual versus predicted inputs and outputs into and out of each dam;
  (ii) actual versus predicted mechanical evaporation from each dam;
  (iii) actual versus predicted rainfall and evaporation; and
  (iv) the actual versus predicted volume of water or treated leachate stored in each dam.
(c) assess actual versus predicted performance of the LTP. This must include:
  (i) actual versus target effluent quality; and
  (ii) actual versus target throughput.
(d) determine whether the leachate and water management system is achieving its intended objectives; and
(e) outline all reasonable and feasible measures that may be required to improve water and leachate management at the site.

ED1

18S. The volume of mine water stored in ED1 must be no more than 10 ML by 31 December 2023.

ED3N

18T. ED3N must be emptied of effluent from the existing leachate system by 31 December 2022.

18U. Prior to discharging treated leachate into sections of ED3N from the LTP, the Proponent must verify the integrity of the dam and prepare an integrity assessment of the ED3N liner to demonstrate the dam is not leaking and is suitable for the storage of treated leachate.

18V. Should the integrity assessment identified in Condition 18U find that the liner in ED3N is not adequate for treated leachate storage, the Proponent must submit management options to the Secretary, Water NSW and the EPA which will be adopted to rectify any integrity issues.

18W. The Proponent must not store treated leachate from the LTP in ED3N until the Secretary and the EPA are satisfied that either ED3N is not leaking or the management options identified in Condition 18V are acceptable.

10. Delete Condition 20 and replace with the following:

20. The Proponent shall comply with the operating hours in Table 7 for the site, unless otherwise agreed in writing by the EPA.

Table 7: Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am – 6 pm
	Saturday	7 am – 1 pm
	Sunday & Public Holidays	Nil
Operations	Monday - Saturday	6am – 10 pm
	Sunday, Christmas Day and Good Friday	Nil

11. Delete Condition 25 and replace with the following:

FIRE AND EMERGENCY MANAGEMENT

25. The Proponent shall prepare and implement a Fire and Emergency Management Plan for the Landfill. This plan must:
(a) be prepared by a suitably qualified and experienced expert;
(b) be approved by the Secretary prior to the commencement of expanded operations;
(c) identify all threats to the environment and public health that could arise from the operation of the project (e.g. fire, overflow or dam failure);
(d) identify strategies to contain and minimise the effects of any threats to the environment and public health such as (but not limited to):
  (i) measures to minimise the risk of fire on site, including in the landfill area;
  (ii) actions to extinguish any fires on site promptly;
  (iii) measures to ensure adequate fire-fighting capacity on site, including a fire fighting tanker; and
(e) detail a communication strategy for notifying the relevant government agencies and potentially affected community in the event of an emergency; and

(f) address any chemical storage required to operate the LTP and be consistent with the Department of Planning and Environment's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'.

This plan must be documented in the Landfill EMP (see condition 3 in schedule 7). Prior to the operation of the LTP, the Fire and Emergency Management Plan must be revised and approved by the Secretary.

12. Insert new conditions 25A and 25B immediately after Condition 25 as follows:

Safety Management System

25A. A comprehensive Safety Management System, covering all on-site operations and associated transport activities involving hazardous materials. Records from the Safety Management System must be kept on-site and must be available for inspection by the Secretary upon request. The Safety Management System shall be consistent with the Department of Planning and Environment's Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'.

Chemical Storage

25B. The Applicant must store all chemicals, fuels and oils used on-site in accordance with:

(a) the requirements of all relevant Australian Standards; and
(b) the NSW EPA's '*Storing and Handling of Liquids: Environmental Protection – Participants Handbook*' if the chemicals are liquids.

In the event of an inconsistency between the requirements listed from (a) to (b) above, the most stringent requirement must prevail to the extent of the inconsistency.

In Schedule 5: Specific Environmental Conditions – Crisps Creek IMF site

13. Delete Condition 17 and replace with the following:

17. The Proponent shall comply with the operating hours in Table 9 for the site, unless otherwise agreed in writing by the EPA.

Table 9: Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am – 6 pm
	Saturday	7 am – 1 pm
	Sunday & Public Holidays	Nil
Operations	Monday - Saturday	6am – 10 pm
	Sunday, Christmas Day and Good Friday	Nil

APPENDIX B – ENVIRONMENTAL ASSESSMENT

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8514
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8507

APPENDIX C – SUBMISSIONS

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8514
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8507

APPENDIX D – RESPONSE TO SUBMISSIONS

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8514
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8507