TORO ENERGY LIMITED

WILUNA URANIUM PROJECT

EXTENSION TO THE WILUNA URANIUM PROJECT
ASSESSMENT NO: 2002 (CMS14025)
PUBLIC ENVIRONMENTAL REVIEW – EXECUTIVE SUMMARY
NOVEMBER 2015

Toro Energy Limited

ABN 48 117 127 590

Level 3, 33 Richardson Street, West Perth, WA, 6005.

PROPOSAL:	EXTENSION TO THE WILUNA URANIUM PROJECT
ASSESSMENT NUMBER:	2002 (CMS 14025)
LOCATION:	Mining at two locations 30 kilometres south and 105 kilometres south-east of Wiluna, Western Australia
LOCALITY:	Shire of Wiluna
PROPONENT:	Toro Energy Limited
LEVEL OF ASSESSMENT:	Public Environmental Review with a 12 week public review
EPBC REFERENCE:	EPBC 2014/7138

DOCUMENT REF	REVISION	DATE	PREPARED BY	CHECKED	AUTHORIZED	AUTHORIZED FOR USE
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Title: Extension to the Wiluna Uranium Project – Public Environmental Review

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1 INTRODUCTION

Toro Energy Limited (Toro) is proposing to extend the Wiluna Uranium Project (the Project) located approximately 960 km north-east of Perth in the Shire of Wiluna, Western Australia, to include the mining of two additional deposits known as Millipede and Lake Maitland.

This Public Environmental Review (PER) has been prepared as part of the process to seek state and federal approval for the Extension to the Wiluna Project (the Proposal) and is the key document for joint environmental assessment of the Proposal by the:

- Western Australian Environmental Protection Authority (EPA) and the Minister for Environment (the Minister) under the *Environmental Protection Act 1986* (WA); and
- Federal Department of the Environment (DoE) and the Minister for the Environment under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).

The PER is also made available to the public to review the Proposal. Comments received from the public and government agencies during the public review period, and Toro's response to these comments, will assist the EPA in preparing an assessment report in which it will make recommendations to the Minister.

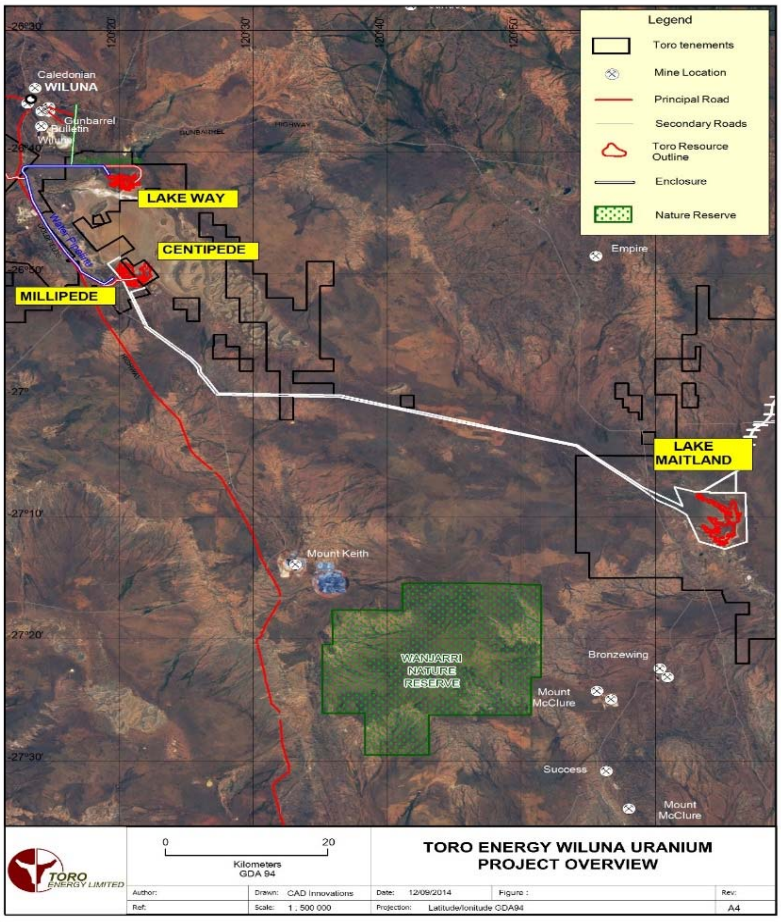
This Executive Summary provides an overview of the PER document and the Proposal. The PER and technical appendices are also available on Toro's website (www.toroenergy.com.au). Hard copies of the PER can be ordered from Toro's Perth office on +61 (8) 9214 2100 or by email at info@toroenergy.com.au.

2 OVERVIEW OF THE PROPOSAL

The subject of this PER is Toro's proposed Extension to the Wiluna Uranium Project which involves the mining of two deposits, **Millipede** and **Lake Maitland**, as well as construction of an ore haul road and associated infrastructure. Toro is the proponent on behalf of its 100% owned and controlled entites Nova Energy and Redport, owners of the Millipede tenements and Lake Maitland tenements, respectively.The regional location of the Proposal is shown in Figure 2.1 and Figure 2.2.

Figure 2.1: The Wiluna Uranium Project in Western Australia

Figure 2.2: Regional location of the Wiluna Uranium Project



After initiating assessment and approval of the Wiluna Uranium Project, Toro acquired two additional deposits: Millipede, also approximately 30 km south of Wiluna and immediately adjacent to Centipede, and Lake Maitland, 105 km south-east of Wiluna. The proposed Extension to the Wiluna Uranium Project would allow Toro to integrate the Centipede, Lake Way, Millipede and Lake Maitland deposits into the Project. The method of mining all four deposits, processing of the ore and transport of finished product would be identical.

Ore from Millipede and Lake Maitland would be processed at the same plant as ore from Centipede and Lake Way. The capacity of the processing plant already approved following EPA Assessment 1819 and EPBC 2009/5174 would not increase under this Proposal. Instead, the plant's operating life could extend beyond 15 years, the period during which sequential mining would be undertaken at Centipede and Millipede, then Lake Maitland and finally Lake Way. During this period, the operation would produce up to 1200 tonnes per annum (tpa) of uranium oxide concentrate (UOC)—the current production limit approved under EPA Assessment 1819 and EPBC 2009/5174. Construction and pre-mining are scheduled to begin at Centipede by late 2016 and at Millipede at the same time, subject to government approval, financing and market conditions.

Toro acquired the Lake Maitland mining and associated leases in November 2013. The previous owner had referred a proposal to the EPA to develop Lake Maitland as a stand-alone mine with a processing plant (EPA Assessment 1821). As Toro's plans for Lake Maitland are limited to mining and haulage operations, Toro has withdrawn the previous proposal and initiated this assessment process.

Millipede, like Centipede, is near the centre-west margin of the Lake Way playa. It covers an area approximately 2.5 km long (north to south) and up to 1.5 km wide, totalling approximately

176 hectares (ha). The Millipede and Centipede deposits are extensions of the same contiguous geological deposit that has been split into two deposits by tenement boundaries over time. For the purpose of this PER, the Millipede deposit refers to all ore contained within mining leases M53/1095 and M53/336. Within these two leases, three pits would be excavated, each about 2 km long with a maximum depth of 15 metres (m).

Lake Maitland is in close proximity to existing infrastructure including roads and an airstrip. The mineralisation is approximately 6 km long (north to south) and 2 km wide, totalling approximately 577 ha in area.

The principal components of the proposed Extension to the Wiluna Uranium Project include:

- Establishment and operation of uranium mining at Millipede and Lake Maitland;
- Development of infrastructure (road, power, water source and supply facilities, access and haul roads, waste management facilities, including for tailings);
- Haulage of ore from Lake Maitland to the approved Centipede processing facility;
- Transport of product to either Adelaide or Darwin for shipment to overseas customers; and
- Closure and rehabilitation of mined and other disturbed areas.

This Proposal does NOT include:

- Any change to the composition or volume of tailings to be stored under already assessed (EPA Assessment 1819 and EPBC 2009/5174) arrangements in mined out voids at the Centipede deposit. It remains Toro's intention as detailed during that assessment to store tailings from ore mined at Centipede and Lake Way in mined out voids at Centipede. The composition and volume of those tailings as assessed is also unchanged.
- Any change to the already assessed (EPA Assessment 1819 and EPBC 2009/5174) annual maximum production capacity for the processing plant;
- Any change to the configuration of the processing plant; or
- Any additional drawdown of groundwater at West Creek beyond the level already assessed (EPA Assessment 1819 and EPBC 2009/5174) for mining and processing of the Centipede and Lake Way deposits. Dewatering at Millipede would comply with the approved drawdown as determined in Assessment 1819 and EPBC 2009/5174. The implementation of groundwater barriers would ensure that flows were restricted and dewatering limited to that already approved.

Toro referred the Proposal to the EPA on 20 February 2014. The EPA determined that the Proposal required assessment as a PER. This level of assessment was advertised by the EPA on 7 April 2014.

The PER must give a detailed assessment of each of the preliminary key environmental factors identified by the EPA for this Proposal.

Toro submitted a referral to the DoE on 20 February 2014. The DoE determined that the Proposal is a controlled action and will be assessed under a bilateral agreement between the state and federal governments.

Toro submitted a referral to the DoE on 20 February 2014. The DoE determined that the Proposal is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* and will be assessed under a bilateral agreement between the Western Australian and federal governments.

A PER level of assessment requires preparation of an Environmental Scoping Document (ESD) setting out the environmental factors raised by the Proposal and the studies the Proponent has undertaken or proposes to undertake. Toro released its ESD on 6 October 2014 for two weeks of public consultation and presented the revised ESD to the EPA in November 2014. The ESD was approved by the EPA on 13 February 2015. The final ESD is available on Toro's website (www.toroenergy.com.au).

2.1 The Proponent

Toro is an Australian uranium company based in Perth, Western Australia and owns a highly prospective project development and exploration portfolio. Toro was listed on the Australian Securities Exchange in March 2006. Toro's vision is to be the leading mid-tier global uranium company through responsible exploration, mining and asset growth. Toro's main undertaking is the development of uranium mining in the Wiluna region. The company secured the Millipede and Lake Maitland tenements in 2012 and 2013, respectively, after initiating government assessment of mining at Centipede and Lake Way in 2009. Toro's Project team, including consultants, is based in Perth and regularly engages on site and in the Wiluna commiunity. The Toro team has significant experience in uranium exploration, project development, mining and processing. Toro has exploration interests in Western Australia, Northern Territory and Namibia, and investments in uranium exploration and development stage uranium companies in Canada.

2.2 Community and Stakeholder Consultation

Toro has undertaken, and continues to undertake, local community and stakeholder consultation in the preparation of this PER. The consultation has enabled Toro to provide information about its Proposal and to seek input to assist Project design and execution considerations.

The community and stakeholder consultation program was developed in accordance with relevant state and federal government guidelines for impact assessment. It also adopted best practice guidelines including the *Core Values for Public Participation* (IAP2, 2010) and the *Performance Standards and Guidelines on Impactive Stakeholder Engagement* (IFC, 2006).

The following summarises Toro's community and stakeholder consultation:

- Government consultation: Toro has met with state and federal ministers, government and opposition members of state and federal parliaments, and senior officers of state and federal departments and agencies involved in assessment of the Proposal.
- Local government: The Millipede and Lake Maitland tenements are within the Shire of Wiluna. Toro has undertaken consultation with the shire and has also consulted the local government representatives of communities along the product transport route, including in South Australia as well as Western Australia.
- Aboriginal community consultation: Toro has regular meetings with the Wiluna Native Title Holders whose land includes the Millipede mining tenements. Site visits have also been provided for the Native Title Holders to discuss mine plans and associated aspects, including radiation and environmental management, mine closure and rehabilitation. A mining agreement is being negotiated with the Native Title Holders. Toro has continued the consultation initiated by the former holder of the Lake Maitland tenements with the Barwidgee People claiming an interest in the Lake Maitland tenements and with other Aboriginal people claiming an interest in Lake Maitland. Toro has been an active participant in the Wiluna Regional Partnership Agreement which has involved government, industry and community representatives in initiatives to support Aboriginal people and organisations in community, employment and business development initiatives.
- Other community consultation: Toro has participated in industry consultation with local and regional communities. During the public exhibition period for its Environmental Review and Management Program to seek approval for mining at Centipede and Lake Way, Toro hosted community open days in Kalgoorlie, Menzies, Leonora and Wiluna.
- Non-government organisations: Toro has met with representatives of the Conservation Council of Western Australia, including on site, to discuss the Council's opposition to uranium mining and the use of nuclear power in general, as well as local and regional environmental, health and safety issues.

2.3 Justification for the Proposal

Australia has more recognized uranium resources than any other country, more than a third of the world's known total. The principal use of uranium is in power generation.

Nuclear power, unlike hydrocarbon fuels (petroleum, natural gas, coal), does not directly generate greenhouse gases and is therefore regarded as an important source of clean energy to combat climate change.

Nuclear power currently accounts for about 11% of total world electricity generation. Nuclear power is used by more than 30 countries and in some it accounts for a very substantial proportion of their power needs. France, for example, derives more than three-quarters of its electricity supply from nuclear fuel and exports nuclear energy to the rest of Europe. Uranium is also used in the production of medical and industrial isotopes.

According to the World Nuclear Association, in April 2015 there were 437 operable civil nuclear power reactors globally, with another 65 under construction, 165 on order or planned and 316 proposed (www.world-nuclear.org.au – World Nuclear Power Reactors and Uranium Requirements – read on 20 May 2015).

The major justification for the proposed Extension to the Wiluna Uranium Project is to respond to the long-term outlook for increased uranium demand to support global nuclear power generation as world economies are expected to turn increasingly towards nuclear and renewable energy to combat the impacts of climate change.

The Proposal would also provide benefits, particularly in regional Western Australia, including:

- Employment during construction for up to 350 people and 200 during the operational phase, with flow-on impacts on service industries;
- Employment, training and other benefits to the local Wiluna community in particular over a longer period, through the extension of the Project and mining agreements with Aboriginal people; and
- Contributions over a longer period to the Western Australian economy resulting from royalties, taxes and the purchase of goods and services.

3 SUMMARY OF THE PROPOSAL

Table 3.1 provides an overview of the Proposal.

Table 3.1: Summary of the Proposal

Element	Details
Proposal Title	Extension to the Wiluna Uranium Project.
Proponent Name	Toro Energy Limited.
Short Description	The mining of uranium at Millipede and Lake Maitland, respectively 30 km south and 105 km south-east of Wiluna, Western Australia, the construction of roads, power and water source and supply facilities and other associated infrastructure, and discharge of waste to an in-pit TSF.
Life of Proposal	In excess of 12 years, including construction, operations and closure.
Project Timing	Subject to regulatory approvals, financing and market conditions, construction could commence at Millipede by late 2016 and at Lake Maitland by 2021.
Estimated Total Ground Disturbance	No more than 1581.8 ha (Millipede 537.9 ha; Lake Maitland 1043.9 ha, including haul road corridor between Lake Maitland and the processing plant).
Mining Method	Open pit using surface miners and heavy machinery mining to depth of approximately 15 m.
Processing Method	Use of already approved plant: crushing and grinding followed by elevated temperature agitated alkaline leach (in tanks), solid/liquid separation and direct precipitation, of uranium oxide concentrate.
Tailings Management	In-pit disposal at Millipede.
Mine Rehabilitation	Progressive rehabilitation during mining with land recontoured to blend with local terrain and revegetated using local provenance species.
Finished Product Transport	By road via Goldfields Highway, Eyre Highway and other existing roads to Adelaide and by rail between Adelaide and Darwin.

The key design and operational characteristics of the Extension to the Wiluna Uranium Project are summarised in Table 3.2 to Table 3.5 and illustrated in Figure 3.1 to Figure 3.4.

Table 3.2: Physical Elements – Millipede

Element	Location	Proposed Extent Authorised for the Revised Proposal	Extent Authorised of the Approved Proposal	Total Proposed Extent Authorised of the Entire Proposal
Mine	Figure 3.1 and geographic coordinates as described in Appendix 2 of the PER.	No more than 175.5 ha of disturbance for mining (including in-pit tailings storage) within a 739 ha development envelope.	Centipede Mining Area (M53/224) – clearing of up to 700 ha of vegetation, including 280 ha of low health vegetation unit with *Tecticornia* species. Lake Way Mining Area – clearing of up to 580 ha of vegetation, including 340 ha of low health vegetation unit with *Tecticornia* species.	No more than 1455.5 ha of disturbance (for mining at Millipede (M53/1095 and M53/336), Centipede (M53/224) and Lake Way (M53/1090), including in-pit tailings storage)
Associated Infrastructure	Figure 3.1 and geographic coordinates as described in Appendix 2 of the PER.	No more than 362.4 ha of disturbance for pre-strip stockpiles (45.4 ha), waste stockpiles (147.6 ha), run of mine (ROM) pad (45.4 ha) and roads, water dam and utilities (124 ha) within a development envelope of 739 ha.	Clearing of up to 250 ha of vegetation.	No more than 612.4 ha of disturbance.

Figure 3.1: Millipede Development Envelope

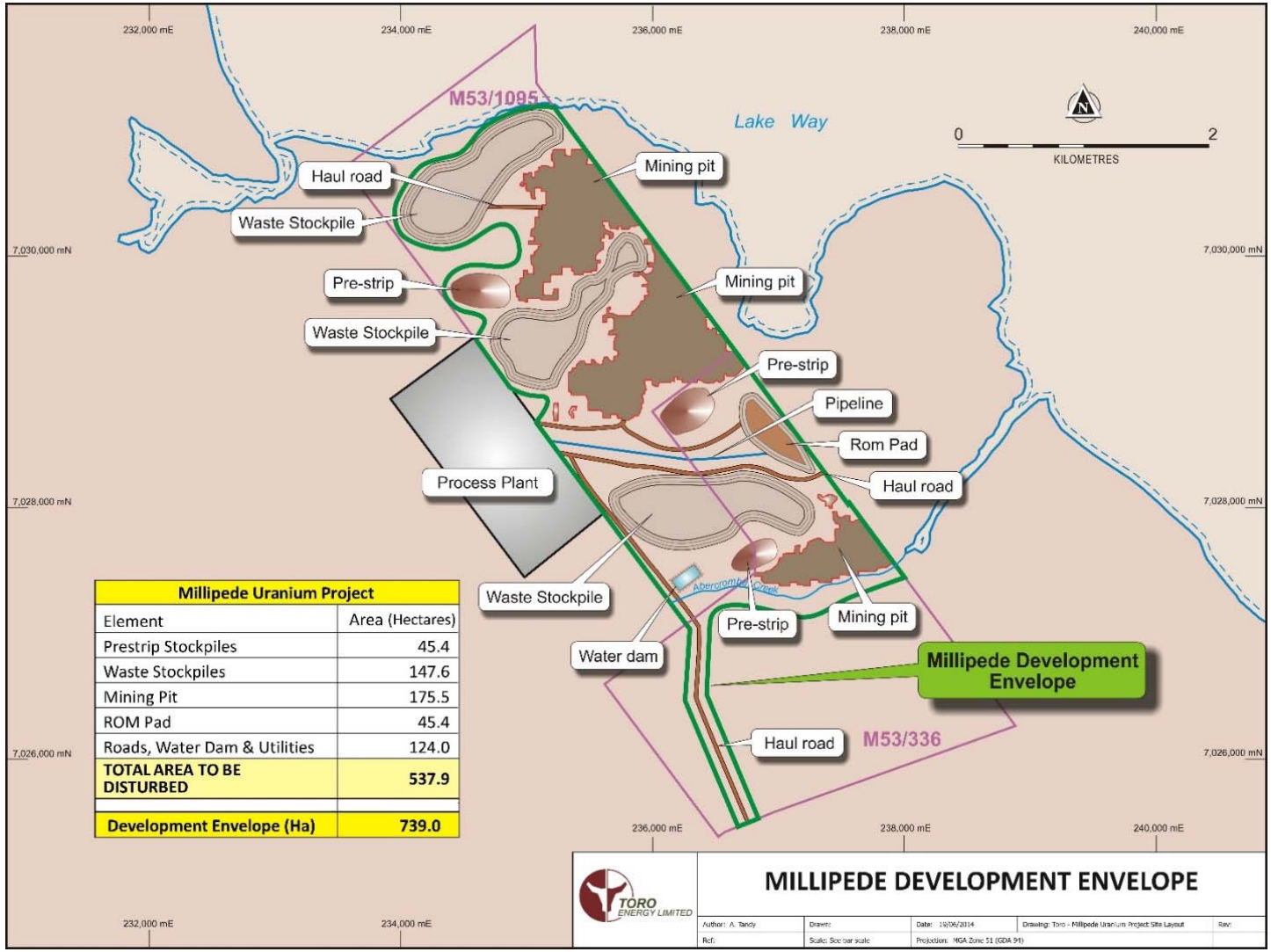


Table 3.3: Operational Elements – Millipede

Element	Location	Proposed Extent Authorised for the Revised Proposal	Extent Authorised of the Approved Proposal	Total Proposed Extent Authorised of the Entire Proposal
Ore Processing (Tailings)	Figure 3.2 and geographic coordinates as described in Appendix 2 of the PER.	Disposal of no more than 2.1 million tonnes per annum (Mtpa) from mining ore extracted at both Millipede and Lake Maitland.	Disposal of no more than 2.1 Mtpa from mining ore extracted at Centipede and Lake Way.	Disposal of no more than 2.1 Mtpa for the entire life of the Proposal.
Dewatering	Figure 3.2 and geographic coordinates as described in Appendix 2 of the PER.	Abstraction of no more than 2 Gigalitres per annum (GL/a).	No more than 1.8 GL/a from dewatering the Centipede and Lake Way deposits.	Abstraction of no more than 2 GL/a from dewatering the Millipede deposit and no more than 1.8 GL/a from the Centipede and Lake Way deposits.

Figure 3.2: Millipede - Centipede Location

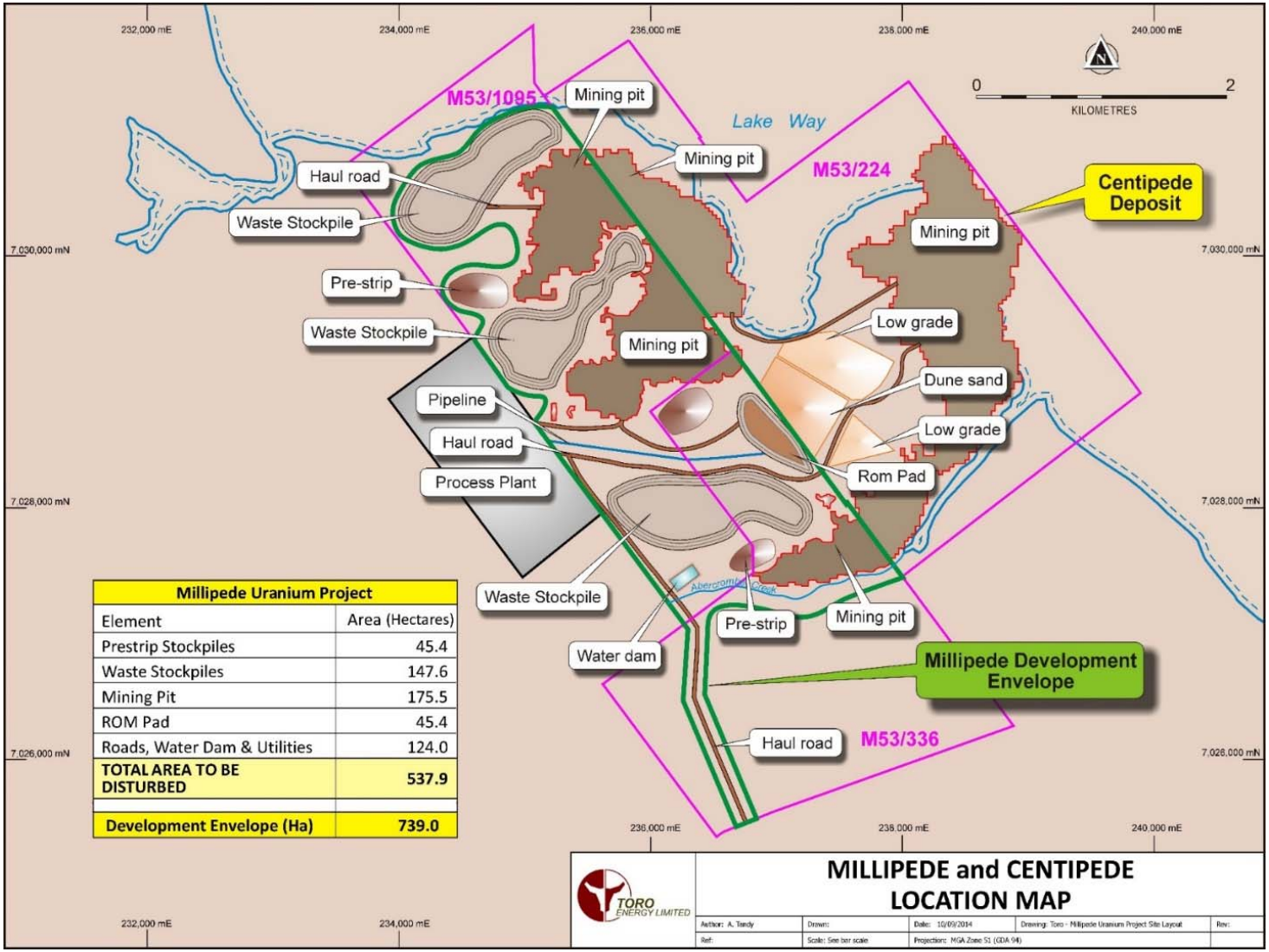
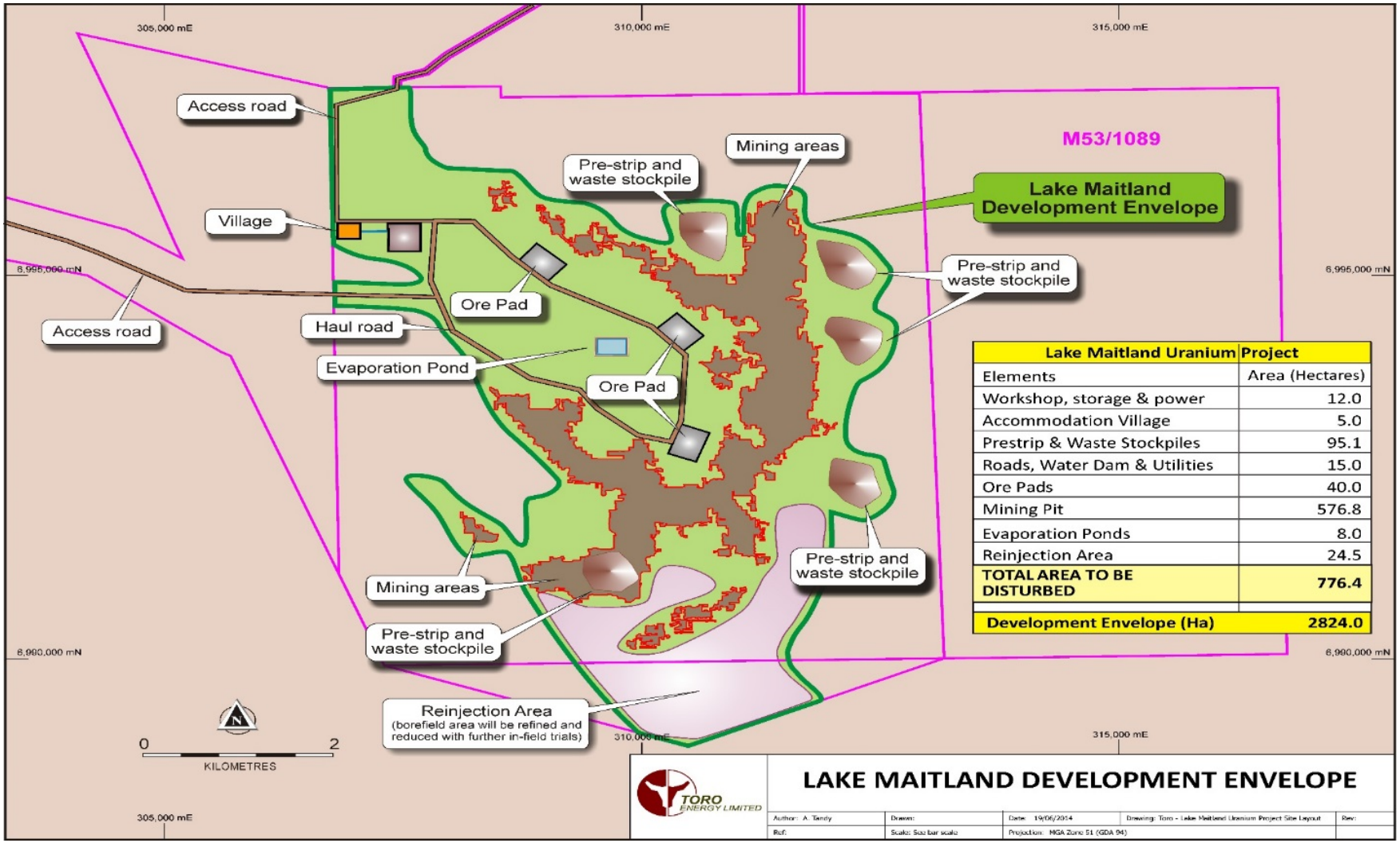


Table 3.4: Physical Elements – Lake Maitland

Element	Location	Proposed Extent Authorised for the Revised Proposal	Extent Authorised of the Approved Proposal	Total Proposed Extent Authorised of the Entire Proposal
Mine	Figure 3.3 and geographic coordinates as described in Appendix 2 of the PER.	No more than 576.8 ha of disturbance within a development envelope of 2824 ha.	Not applicable (N/A) – no authorization has yet been given for mining at Lake Maitland.	No more than 576.8 ha of disturbance for mining at Lake Maitland.
Associated Infrastructure	Figure 3.3; Figure 3.4 (Lake Maitland borefield access road); and geographic coordinates as described in Appendix 2 of the PER.	No more than 199.6 ha of disturbance within a development envelope of 2475 ha for associated infrastructure including workshop, storage and power (12 ha); accommodation village (5 ha); pre-strip and waste stockpiles (95.5 ha); roads, water dam and utilities (15 ha); ore pads (40 ha); evaporation ponds (8 ha); and reinjection borefield (24.5 ha).	N/A	No more than 199.6 ha of disturbance.
Southern Haul Road	Figure 3.4 and geographic coordinates as described in Appendix 2 of the PER.	No more than 267.5 ha of disturbance within a 330 ha development envelope (243.9 ha for road corridor, borrow pits and water filling stations; 23.6 ha for borefield and access road).	N/A	No more than 267.5 ha of disturbance

Figure 3.3: Lake Maitland Development Envelope



Lake Maitland Uranium	Project
Elements	Area (Hectares)
Workshop, storage & power	12.0
Accommodation Village	5.0
Prestrip & Waste Stockpiles	95.1
Roads, Water Dam & Utilities	15.0
Ore Pads	40.0
Mining Pit	576.8
Evaporation Ponds	8.0
Reinjection Area	24.5
TOTAL AREA TO BE DISTURBED	**776.4**
Development Envelope (Ha)	**2824.0**

Figure 3.4: Haul Road Alignment – Lake Maitland to Processing Plant

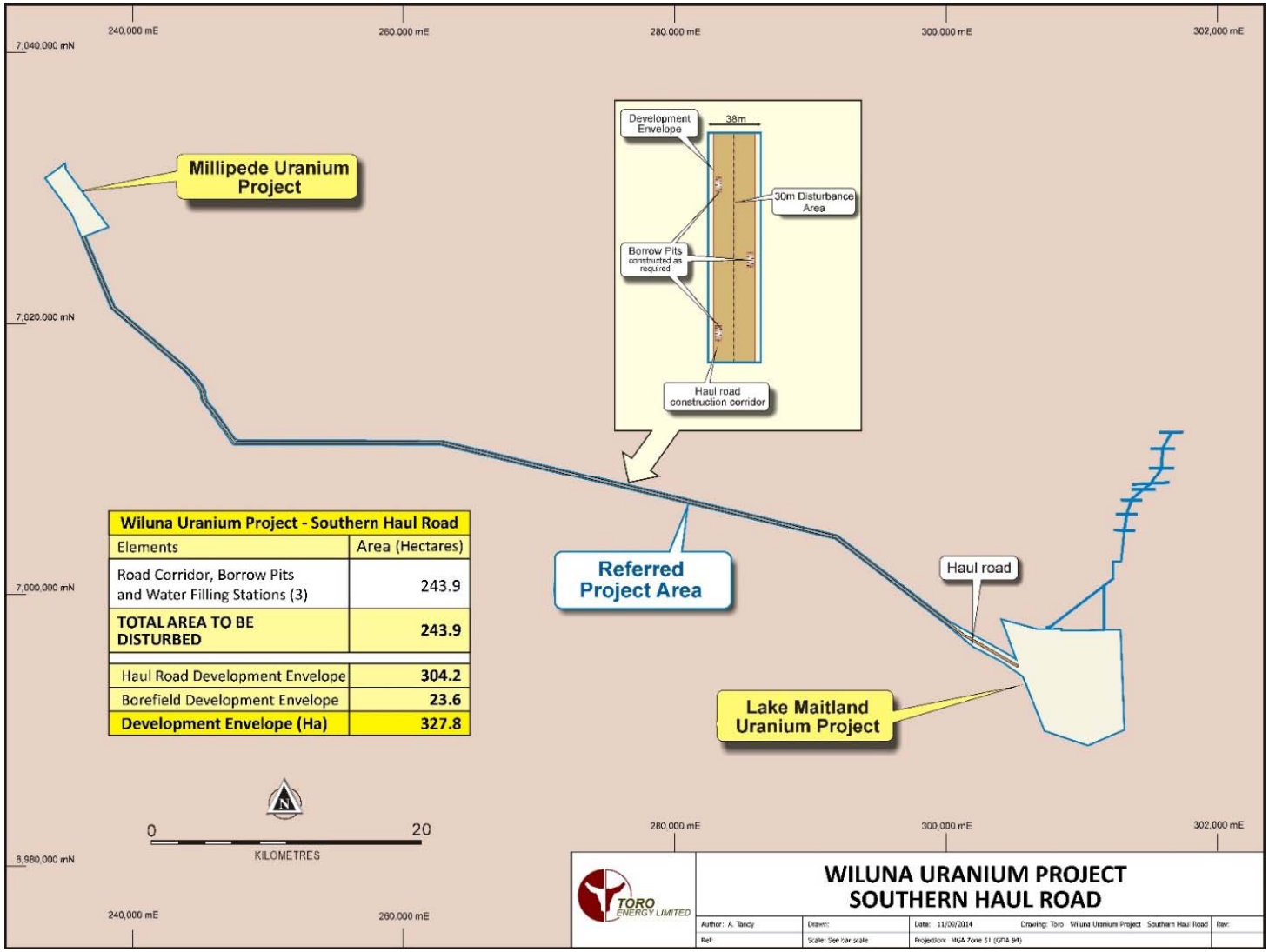


Table 3.5: Operational Elements – Lake Maitland

Element	Location	Proposed Extent Authorised	Extent Authorised of the Approved Proposal	Total Authorised Extent of Entire Proposal
Dewatering	Figure 3.3 and Geographic Coordinates as described in Appendix 2 of the PER.	Abstraction of no more than 4 GL/a during dewatering of the Lake Maitland deposit.	N/A	Abstraction of no more than 4 GL/a during dewatering of the Lake Maitland deposit.
Aquifer Reinjection	Figure 3.3 and geographic coordinates as described in Appendix 2 of the PER. The area delineated as the reinjection borefield has been sized to capture the shallow and deep aquifers in the area that will be used to determine the best aquifer in which to reinject. This area will be reduced as field tests determine the size and nature of the reinjection process.	Downstream aquifer reinjection of no more than 4 GL/a of excess water from pit dewatering.	N/A	Downstream aquifer reinjection of no more than 4 GL/a of excess water from pit dewatering. Disturbance area to be 24.5 ha maximum. If possible, reinjection will be into the same aquifer as abstraction occurred.
Water Supply	Figure 3.3 and geographic coordinates as described in Appendix 2 of the PER.	Water supply of no more than 1.5 GL/a.	N/A	Water supply of no more than 1.5GL/a.

3.1 Mining

The Extension to the Wiluna Uranium Project is based on mining the Millipede and Lake Maitland deposits which together comprise a 31.2 million pound uranium (U_3O_8) Joint Ore Reserves Committee (JORC) resource. They would be integrated sequentially with mining the Centipede and Lake Way deposits. The total JORC resource for all four deposits is 56.5 million pounds of U_3O_8.

Table 3.6 lists the indicative schedule for implementation of the Proposal should environmental approval be granted for mining at Millipede and Lake Maitland and Toro's Board be able to make a final investment decision in late 2016.

Table 3.6: Implementation Schedule

Deposit	Potential commencement of mine development	Completion (including mine closure and rehabilitation)
Millipede (this assessment)	No earlier than late 2016	2023
Centipede (already approved – EPA 1819 and EPBC 2009/5174)	No earlier than late 2016	2023
Lake Maitland (this assessment)	2021	2028
Lake Way (already approved – EPA 1819 and EPBC 2009/5174)	2028	2038

3.1.1 Millipede

The shallow nature and areal extent of the resource at Millipede means that it can be mined in sections by open pit in the manner already assessed for mining of the Centipede and Lake Way deposits (EPA Assessment 1819 and EPBC 2009/5174). Mining would not require drill and blast activities. The mining method proposed is based on surface miners for ore fragmentation and a conventional excavator and mine truck load and haul fleet. Mining operations would be continuous, 24 hours a day, 7 days a week.

The mining rate would be sufficient to deliver 1.3 Mtpa of ore to the processing plant for a life of about five years. Waste rock would at first be stockpiled next to the pit being mined and then backfilled into mined-out areas. Surface soil cover would be mined and stockpiled separately to be placed over the areas of backfilled pits as part of progressive rehabilitation.

At closure, the surface topography would be similar to the pre-mining landscape.

As with the method already assessed for mining at Centipede (EPA Assessment 1819 and EPBC 2009/5174), the mined-out voids at Millipede would be used for tailings storage. It is also proposed that mined-out voids at Millipede would be used to store tailings from processing of ore mined at Lake Maitland. Above ground storage of tailings is not proposed. Each tailings cell would be covered with inert rock to a planned depth of at least 2 m.

The tailings would have low permeability, indicating very low seepage rates. Metallurgical test work has shown that radionuclides predominantly remain within the solids fraction of the tailings, with about 0.3% reporting to the liquor fraction. At closure, uranium and other trace elements in groundwater beyond the perimeter of disturbance would not exceed concentrations in the pre-mining environment. Local groundwater flows would be through the surrounding materials, rather than through the tailings mass itself.

Toro's Mine Closure and Rehabilitation Plan would be implemented to ensure that radiation levels in the areas of its operations were consistent with pre-mining levels.

3.1.2 Lake Maitland

The mining method, including closure and rehabilitation, would be the same as that proposed for Millipede and at the already assessed Centipede and Lake Way deposits (EPA Assessment 1819 and EPBC 2009/5174) with no drilling or blasting required. The mining rate would be sufficient to provide 1.3 Mtpa of ore to the processing plant over a mine life of about six years.

Waste rock produced by mining would at first be stockpiled next to the pit in controlled areas and backfilled progressively into the pit as part of rehabilitation. Topsoil would be stripped and stockpiled separately for rehabilitation. At closure, the surface topography would be similar to the pre-mining landscape.

It is proposed that tailings produced from the processing of ore mined at Lake Maitland would be stored in mined-out voids at the Millipede deposit. Due to the similarities of the two deposits and processing methodologies, the mining tailings from the Lake Maitland deposit are expected to be of a very similar composition to those from Millipede.

3.2 Dewatering

3.2.1 Millipede

Much of the uranium resource occurs at or below the water table and dewatering of the open pits would be required. The water table is typically between 0.5 m and 5 m below the natural ground surface. The water is contained within surficial sediments of the delta environment and is hypersaline.

There would be no discharge to surface water during routine operations as water from pit dewatering would be used as part of the process water supply. To minimise the amount of water to be pumped from the pits during mine dewatering, water barriers would be constructed to prevent the ingress of water into mining areas during operations. Consistent the existing conditions of approval for mining at Centipede and Lake Way, Toro would design and implement a suitable groundwater barrier system around the mining areas at Millipede. Trials by Toro at the Centipede deposit have indicated such barriers can significantly reduce groundwater inflow.

3.2.2 Lake Maitland

There is a shallow groundwater table between 1 m and 3 m below the natural ground level with the uranium deposit generally occurring below the groundwater table. Pit dewatering would be required ahead of and during mining and would be undertaken in a manner similar to that proposed for the already assessed Centipede and Lake Way deposits (EPA Assessment 1819 and EPBC 2009/5174) and at Millipede. This would include the installation of barriers to minimise the amount of water to be pumped from the pits during mine dewatering.

There would be no discharge of mine water to surface water. During routine operations, as much water as possible from pit dewatering would be used as part of the operational water supply. Toro has investigated the disposal of excess water from pit-dewatering by downstream aquifer reinjection and the results are presented in this PER. They show that reinjection would have no impact on water quality and would not permanently affect local stygofauna populations.

3.3 Water Requirements

The average annual water demand for the assessed Wiluna Uranium Project (EPA Assessment 1819 and EPBC 2009/5174) is estimated at up to 2.5 GL/a. This Proposal does not alter this annual requirement. The annual production capacity of the processing plant would not change from that already assessed (EPA Assessment 1819 and EPBC 2009/5174).

There are three main applications of water in the assessed Wiluna Uranium Project and this Proposal:

- Ore processing;
- Mining and haulage activities including dust suppression; and
- Workforce accommodation and human consumption.

There are numerous available water resources in the Wiluna region. Most of the region's water supply is hypersaline water that has very limited practical use and is generally too salty to be economically and easily desalinated for human consumption or used in agricultural applications (irrigation and livestock). However, Toro has identified sufficient fresh to brackish and high salinity water to meet the Project's needs.

The water supply requirements of the assessed Wiluna Uranium Project (EPA Assessment 1819 and EPBC 2009/5174) and this Proposal can be met from a combination of:

- The proposed Lake Maitland borefield – low salinity;
- Dewatering at Centipede and Millipede – high salinity;
- Lake Maitland dewatering – high salinity;
- Lake Way dewatering – high salinity; and
- West Creek borefield – fresh to brackish.

Lake Maitland was acquired after the assessment process for the Wiluna Uranium Project was initiated. Toro's Lake Maitland ground holding includes a source of fresh-brackish water 10 km to the north-east of the deposit. Toro has expanded on the work undertaken by the former tenement holder including further modelling of this borefield to assess its capacity to operate at 1.3 GL/a for a period of 20 years. The modelling suggests this is possible, while maintaining a 75% aquifer saturation.

The Lake Maitland borefield is a significant additional source of low salinity water for the already approved processing plant.

Based on engineering work to date, the assessed Wiluna Uranium Project and this Proposal require between 0.2 GL/a and 0.3 GL/a of low salinity water for human consumption and specific uses in the processing facility (e.g. for raising steam in boilers or for use in fire protection systems).

The West Creek borefield is a source of fresh to brackish water. The EPA assessment for the original Wiluna Uranium Project concluded that operation of the West Creek borefield at a rate of up to 0.7 GL/a for seven years would not result in unacceptable environmental impacts. A section 5C licence application has been submitted to DoW for water abstraction from the West Creek borefield.

The identification of the Lake Maitland borefield provides greater flexibility to optimize water supply to the Project.

In addition, a significant amount of saline water is available from mine dewatering at Millipede and Lake Maitland. To help meet the water demand at the processing plant, Toro would connect the borefield and mining operation at Lake Maitland to the processing plant via an above ground pipeline laid within the corridor for the proposed haul road. The haul road corridor would be wide enough to accommodate the pipeline without the need for further disturbance of vegetation and fauna habitat.

To the extent that the Lake Maitland borefield and dewatering during mining activities at Lake Maitland yield surplus water, the borefield may be switched off or drawn upon at a reduced rate.

Section 9.6 of the PER provides further description of the water requirements for this Proposal.

3.4 Ore Processing

Ore from Millipede and Lake Maitland would be trucked by haul roads to the previously assessed plant for processing using a conventional alkaline agitated leach process (EPA Assessment 1819 and EPBC 2009/5174). The capacity of the processing plant would not increase from that already assessed, but it would operate for a longer period.

3.5 Finished Product Transport

Finished product would be packaged at the processing plant in sealed 205 litre (L) drums which would then be stacked and braced in sea containers. Up to five containers per month would be transported by road on the Goldfields Highway to Kalgoorlie and the Eyre Highway to South Australia for shipment from Port Adelaide or railed from there to Darwin Port for shipment. The monthly rate of finished product transport and the method would not change from that already assessed (EPA Assessment 1819 and EPBC 2009/5174), but would occur over a longer period.

Toro's method of finished product transport would adopt procedures followed by uranium mines in South Australia and the Northern Territory for more than 20 years, which have resulted in uranium being transported by road and rail without incident.

3.6 Supporting Infrastructure

The following ancillary infrastructure would be required to support mining.

3.6.1 Millipede

The construction and operational workforce would be accommodated on site at facilities to be established to support already approved mining at the Centipede and Lake Way deposits.

Haul roads and pipelines would be built to allow for the transport of ore and water to enable the mining of the ore body. Around the deposit, water storage facilities and evaporation ponds would be established to store processing water and water abstracted during dewatering for use or evaporation. Due to the location of the Millipede deposit and its proximity to the Centipede deposit, no other supporting infrastructure would be required at Millipede.

3.6.2 Lake Maitland

The construction and operational workforce for Lake Maitland would be accommodated on site.

In effect, Lake Maitland would be a small mine with support infrastructure such as administration buildings, waste water treatment and vehicle servicing areas, as well as camp accommodation. The scale of these buildings would reflect the nature of the operations and so would be on a lesser scale than was proposed in the previous referral of the Lake Maitland Project to the EPA (EPA Assessment 1821). Toro expects that the maximum workforce based at Lake Maitland would be approximately 50 people, and that the mining operation would continue for approximately seven years, including closure.

3.7 Operational Workforce

For its duration, including mining at Millipede and Lake Maitland, the Project would employ about 200 personnel at full production capacity.

3.8 Radiation Management

Toro would adopt international standards as the basis for its radiation management system. The recommendations of the International Commission on Radiological Protection (ICRP) and the International Atomic Energy Agency (IAEA) have been adopted in Australia through state- and territory-based legislation or through the Australian Radiation Protection and Nuclear Safety Agency's (ARPANSA) series of radiation-related Codes of Practice. Toro would comply with all relevant Western Australian legislation and regulations relating to radiation protection.

While uranium is radioactive, potential hazards from its mining can be controlled through well-established mine design and management practices.

Radiation assessments have been undertaken in the region for more than 30 years and Toro has undertaken its own studies, modelling and monitoring to extend the knowledge and understanding of how mining uranium may affect human health, non-human biota and the environment, including groundwater.

The PER discusses a range of studies and investigations at Millipede and Lake Maitland and in the wider region. It also provides estimates of radiation doses for workers, the public and non-human biota should mining proceed and describes operational management measures to ensure radiation exposures are kept As Low As Reasonably Achievable (ALARA) in conformity with this internationally accepted principle of radiation management. During the operational phase, Toro would undertake

continuous monitoring to ensure that actual outcomes are consistent with the predictions of its studies and modelling.

As discussed in the PER, the predictive work Toro has undertaken shows the average exposure to a mine worker would be less than one-quarter of the statutory limit. Exposures of the nearest residents to the Proposal would be about one-twentieth of the limit.

Management measures to ensure these outcomes in practice would include:

- Adoption of the ALARA principle in dose management;
- Minimising dust from operations through progressive rehabilitation;
- Best practice control systems for processing, finished product packing and transport; and
- Effective monitoring, emergency response and security plans.

Predicted radiation doses to members of the public along the transport route would be extremely low and well under the statutory limit.

Toro's studies have also demonstrated that the Proposal would not have any adverse radiological impact on non-human biota.

3.9 Waste Management

3.9.1 Millipede

Mineralised waste would at first be stockpiled near the pit before being returned to the mined out voids after the tailings had consolidated sufficiently to be covered with waste material and rehabilitated. Low level mineralised material would be placed on the consolidated tailings and then covered with layers of non-mineralised material, followed by topsoil to complete rehabilitation. Rehabilitation would occur progressively throughout the mining operation.

3.9.2 Lake Maitland

Mineralised waste rock would at first be stockpiled before being placed directly back into mined-out areas and covered with non-mineralised material. Rehabilitation of the mined areas would be progressive. Tailings from processing of ore mined at Lake Maitland would be stored in mined-out voids at Millipede.

3.9.3 Tailings

Ore mined at Lake Maitland would be transported by truck for processing at the already assessed processing plant adjacent to the Millipede-Centipede tenements. The tailings produced from processing of this ore and the processing of ore from MIllipede would be stored in the voids created from the mining of overburden, waste and ore at the Millipede deposit. Tailings would not be returned for storage at Lake Maitland.

Many mines (uranium and other commodities) use above ground structures to store tailings, which can give rise to dust, erosion, scouring and other issues, as well as result in a significant change to landforms.

There is now considerable Australian and international experience with the adoption of in-pit tailings management. The tailings management strategy for this Proposal has been developed by benchmarking against industry accepted leading tailings management practices. The strategy selected, to return tailings to mined-out pit voids to ensure their isolation and to prevent any adverse impacts to the environment and human health and safety, represents best practice tailings management. It also responds to the wishes of Traditional Owners of the land on which the Proposal would be undertaken that post-mining the area is returned as close as practicable to the natural

landform. Accordingly, the Proposal will leave no artificial, above-ground tailings storage structures post-mining.

In this Proposal, the containment of the tailings and the associated liquor and gases has been designed to meet environmental objectives that are discussed in Sections 9.6, 9.7 and 9.9 of the PER. The environmental objectives that are directly applicable to management of tailings are as follows:

- To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected;
- To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected;
- To ensure that human health is not adversely affected; and
- To ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner.

To achieve the tailings management objectives, the following approach to tailings management at Millipede would be adopted:

- The overall area of disturbed footprint arising from mining activities and associated tailings storage would be minimised;
- A practical operating strategy would be implemented that takes cognisance of the mining schedule and the concomitant need for, and effects of, pit dewatering;
- The TSF would be developed in such a way that it maintains its integrity during operations and after mine closure, taking into account potential natural processes such as flood events; and
- The TSF would be developed to produce an acceptable final landform and post-closure land use.

As much supernatant water as practicable would be recycled to the process plant to minimise water usage and the area required for evaporation facilities.

To demonstrate that in-ground tailings is a safe and viable option for the long-term storage of tailings, Toro has previously undertaken geochemical and solute transport modelling of seepage into the surrounding groundwater environment. This was completed as part of the assessment of mining at Centipede and Lake Way (EPA Assessment 1819 and EPBC 2009/5174). The same management method is proposed for tailings produced from ore mined at Millipede and Lake Maitland.

During this assessment Toro revised its modelling to ensure all chemical speciation/complexing, and therefore uranium solubility/sorption is in line with the most recent international research on uranium hydro-geochemistry and contaminant transport. Investigations confirm Toro's disposal methodology remains valid for this Proposal.

3.10 Closure and Rehabilitation

Section 9.9 of the PER outlines Toro's approach to mine closure and rehabilitation. Most of the land on which mining would occur at Millipede and Lake Maitland has native vegetation, except for minor areas of existing disturbance associated with roads and access tracks, and some cleared areas from previous mining trials.

As outlined above, in implementing the Proposal Toro would seek to minimise land disturbance and undertake progressive rehabilitation of disturbed areas in the manner of a strip mining operation, with voids created by mining being backfilled using residue and overburden from active mine pits. This approach is consistent to that which was part of the already assessed Wiluna Uranium Project (EPA Assessment 1819 and EPBC 2009/5174). Disturbed areas would be recontoured to blend in with the surrounding landscape. The form, soil and vegetation types used in rehabilitation design would mimic the pre-mining landscape. No large or high waste landforms or open pits would remain

after mining with all disturbed areas being returned, as close as practicable, to the original topography.

At cessation of all site activities, final land forming and revegetation would be completed in accordance with the approved Mine Closure and Rehabilitation Plan (MCRP).

4 REGIONAL SETTING AND EXISTING ENVIRONMENT

The Millipede and Lake Maitland deposits are located in the Shire of Wiluna in the sparsely populated Murchison region of Western Australia's Mid West.

The town of Wiluna, located approximately 960 km north-east of Perth, is the principal centre in the shire. The town lies along the Goldfields Highway, which connects Wiluna to Leinster (population 1294, located 170 km to the south-south-east) and to Meekatharra (population 1377, located 130 km to the west). Wiluna Township is the gateway to the Canning Stock Route and the Gunbarrel Highway extends from Wiluna to Alice Springs. The nearest regional centre to Wiluna is Kalgoorlie (population just over 31,000, located 540 km south-south-east of Wiluna).

At the last census (in 2011), the population of the Shire of Wiluna was 1159 of whom approximately 25% were Indigenous Australians. The mining industry remains the largest employer in the shire, accounting for approximately 36% of all jobs.

4.1 Cultural Heritage

4.1.1 Millipede

The township of Wiluna is on Martu land. Martu are desert people and the Traditional Owners and occupiers of the surrounding lands extending from the edge of the Little Sandy Desert, east to the Gibson Desert and north into the Great Sandy Desert.

Wiluna is a major traditional Law centre and place where Indigenous rituals are conducted. Land in the vicinity of Millipede is used for traditional purposes including obtaining bush tucker, medicines, hunting and other cultural business. In July 2013, the Federal Court of Australia granted Native Title to the Wiluna People over land which includes the Millipede deposit.

4.1.2 Lake Maitland

There is no registered Native Title claim over the mining lease at Lake Maitland. The former owner of Lake Maitland developed a positive relationship with the Barwidgee People who speak for country at Lake Maitland and Toro is maintaining consultations with the Barwidgee in developing its mining plans and with other Aboriginal people claiming an interest in the land.

4.1.3 Non-Indigenous Heritage

There are two sites of European heritage significance in the Wiluna region that are permanent entries on the Heritage Council of Western Australia's Register of Heritage Places. The Mine Manager's House built in 1929 is 2 km south-east of Wiluna and the Wiluna District Hospital Group was established in the town over a period of about 30 years from the beginning of the 20th century.

4.2 Climate

The Mid West region of Western Australia has an arid climate with two distinct seasons: a hot summer from October to April and a mild winter from May to September. Summer temperatures frequently exceed 40°C. Light frosts occasionally occur inland during July and August. Rainfall is generally localised and unpredictable. There is significant annual evaporation as a result of the high temperatures. The majority of the Mid West has a bimodal rainfall distribution. From December to March rains result from tropical storms producing sporadic thunderstorms and from May to August extensive cold fronts move eastwards across Western Australia, reaching the Murchison and producing light rains.

4.3 Geology

4.3.1 Millipede

Millipede is associated with the broad palaeochannel deltas that empty into the Lake Way hypersaline playa, which itself represents the remnants of a major primary palaeodrainage system of predominantly Tertiary age.

The uranium mineralisation is located in shallow deposits consisting of calcrete, dolomite, silt, clays and sand. These deposits were laid down within the palaeochannel drainage system and follow the ancient channel structures. The mineralisation generally occurs at or in close proximity to the current water table, typically 1 m to 2 m below ground level. The total thickness of mineralisation does not typically exceed 6.5 m.

4.3.2 Lake Maitland

Like Millipede, the Lake Maitland deposit is dominated by carnotite and hosted within a series of Tertiary age, clastic, chemical and evaporitic sedimentary units formed within a hypersaline playa lake setting. The deposit is flat-lying and thin, averaging 1.7 m (range 0.02 m to 3.8 m) in thickness. The uranium generally occurs within a single coherent horizon located 2 m to 5 m below the surface. The mineralisation has a large areal extent and is essentially crescent-shaped with three arms extending towards the west.

4.4 Topography, Landforms and Soils

Millipede and Lake Maitland are in a region characterised by internal drainage, areas of red sand plains, salt lake systems associated with an occluded palaeodrainage system, broad plains of red-brown soils and breakaway complexes. The ephemeral drainage system covers 400,000 square kilometres (sq km).

4.4.1 Millipede

The topography comprises gently sloping sand plains, dunes and alluvial flats/playa type environments with the uranium deposit located over two main land systems. The dominant Carnegie Land System encompasses the Lake Way salt lake and fringing saline alluvial plains and surrounding sand dunes. The Cunya Land System represents the calcrete earths and platforms adjacent to Lake Way. The majority of soils where mining would occur are loamy sands, clayey sands, sandy loams or sandy clay loams.

4.4.2 Lake Maitland

Locally, the typography is very flat; the ground surface of Lake Maitland (around 470 m Australian Height Datum (mAHD) to 472 mAHD) grades from the north to south at a slope of less than 0.05% in the vicinity of the proposed mine. The landforms of the area are sand plains (with hardpan wash plains and some mesas, stony plains and salt lakes) on granitic rocks (and some greenstone) of the Yilgarn Craton.

4.5 Surface Water

4.5.1 Millipede

The proposed mining area is located on the western edge of Lake Way, a large salt lake with an 11,000 sq km catchment and a surface area of approximately 245 sq km. Lake Way forms part of an extensive palaeodrainage system which drains south-east into the larger Carey palaeodrainage. Lake Way is the first (furthest upstream) salt lake of a salt lake chain/palaeoriver system extending to the south-east linking to Lake Maitland and Lake Carey.

Surface water flow is ephemeral and highly dependent on high rainfall events. None of the watercourses or drainage lines in the Millipede mining area flow naturally year round. Intermittent surface water flows occur after heavy falls normally associated with cyclonic rains which typically occur in the months of January to March. Dewatering discharges from existing and historic mining operations in the northern part of Lake Way have for some years caused more or less continuous surface discharge of water to Lake Way.

4.5.2 Lake Maitland

Lake Maitland is an ephemeral salt lake with a catchment of approximately 4,300 sq km. It is one of the smaller lakes in the region and is predominantly dry, although it can be inundated after heavy summer rains and cyclonic activity from the north-west.

The catchment watershed upstream of Lake Maitland has an overall area of approximately 11,000 sq km and extends 115 km north-west of Wiluna. Around 70% of the overall catchment lies upslope of Lake Way, which itself has a storage capacity of about 700 million cubic metres (Mm^3) at the point of overflow to the downstream catchment. General surface slopes are extremely low at less than 0.06% over the majority of the catchment, reducing to less than 0.05% in the vicinity of the area to be mined at Lake Maitland.

4.6 Groundwater

4.6.1 Millipede

Regional groundwater flow in the general locality of the Proposal forms part of the Carey palaeodrainage, which flows from north-west to south-east. Under dry conditions, it is believed that evaporation from the bed of Lake Way induces water movement to the surface, from where it is evaporated, resulting in groundwater discharge from the lake in the form of evaporation. However, given the 30 m elevation gradient to Lake Maitland, it is likely that some subsurface groundwater flow to the south-east also occurs, particularly when elevated water levels occur following extreme rainfall events.

In the proposed mining area, the groundwater table is typically 2 m to 5 m below the surface and the depth to water generally reduces with proximity to Lake Way. The groundwater flow direction in the immediate area of the Proposal is generally to the south and east.

Groundwater beneath the proposed mining area is hypersaline, with a neutral to slightly alkaline pH. Both uranium and vanadium are naturally elevated, reflecting the mineralised character of the area.

4.6.2 Lake Maitland

The following four broad aquifer types have been identified:

- Shallow alluvium;
- Calcrete;
- Palaeochannel; and
- Fractured rock.

Water quality ranges from fresh in the shallow sediments to hypersaline within approximately 12 km to the south of the mining area.

There are many pastoral bores in the region. They generally utilise shallow superficial aquifers and usually do not exceed 30 m in depth.

4.7 Air Quality

The air emissions requiring management would be particulates, specific constituent metals or radionuclides in airborne dusts, radon gas and oxides of nitrogen, sulphur and carbon from burning of fossil fuels. Results from baseline studies and modelling of potential impacts on air quality have found that the Proposal is unlikely to exceed any air quality standard at sensitive receptors.

4.7.1 Millipede

Meteorological and air quality monitoring and temperature profiling has enabled an assessment of dust and radiation dispersion potential and associated impacts from mining activities.

The key radiological dust sources would be from:

- Mining of ore;
- Ore stockpiles;
- Ore transfer processes, crushing, road haulage and conveyor systems; and
- Wind erosion of tailings deposits.

The only sensitive human receptor site potentially exposed to significant dust concentrations would be Toro's accommodation village where the predicted maximum dust concentrations resulting from mining operations at Millipede would be within a residential standard of 'desirable not to be exceeded'. Other than at the accommodation village, airborne particulate concentrations would be no more than 7% of relevant particulate criteria at any other receptor.

4.7.2 Lake Maitland

The main anthropogenic sources of dust in the region include:

- Motor vehicle movements;
- Mining activities; and
- Pastoral activities.

The main natural sources of dust in the region include:

- Wind erosion; and
- Scrub fires initiated by lightning strikes.

The predominant source of particulate matter in the region is wind eroded crustal dust. Larger eroded dust particles tend to settle out, leaving finer particles of less than 10 microns (µm) to represent the majority of dust entrained in the atmosphere over long distances.

Baseline air quality modelling has indicated relatively low levels of background particulate matter and that all contaminants would comply with established modelling criteria if managed appropriately.

4.8 Radiation

Baseline radiation surveys have been carried out to characterise existing surface level radiation conditions at both Millipede and Lake Maitland.

Many areas of the globe have regions of elevated background radiation. This is not unusual and does not imply higher health risks for people living in such areas. The levels observed where mining at Millipede and Lake Maitland would occur are within naturally occurring ranges.

4.8.1 Millipede

Gamma Dose Rate

Uranium has been naturally accumulating over a very long period of time and therefore gamma radiation levels are generally higher than in the surrounding region, with typical gamma dose rates ranging up to 0.86 microseiverts per hour (µSv/h). Away from the deposit, gamma dose rates ranged from 0.05 µSv/h to 0.16 µSv/h. These are similar to average dose rates elsewhere in Australia.

The predicted average gamma dose for a miner at Millipede is 1 millisievert per annum (mSv/a). This is well below the occupational dose limit.

Radon

The results across all locations from baseline monitoring ranged from 9 becquerels per cubic metre (Bq/m^3) to 142 Bq/m^3 which is typical for natural background ranges observed throughout Australia.

Radionuclides in Dust

Toro has sampled dust in the air in order to measure the typical composition and concentration of radionuclides in naturally occurring dust. The concentration of radionuclides was low.

High volume sampling has also been conducted with concentrations of radionuclides elevated compared to world averages. This is to be expected, given the presence of the shallow uranium ore in the area.

Radionuclides in Soils

Radionuclide concentrations in soils in the shallow mineralised areas are elevated in comparison with concentrations outside the mineralised areas. In general, radionuclide levels across the region are also elevated in comparison with world averages, as the lake systems are areas of natural deposition.

Local sampling shows the concentration of radium-226 in soils ranged from 27 becquerels per kilogram (Bq/kg) to 403 Bq/kg, with an average of 92 ±220 Bq/kg (2σ) and a median of 62 Bq/kg. The highest results occurred in surface soil samples taken in the vicinity of the ore body. These higher levels are to be expected, because the ore is close to the surface.

Radionuclides in Groundwater

Radiological testing of groundwater has shown uranium concentrations averaging 7.81 becquerels per litre (Bq/L) in groundwater in the ore zone and up to 2.36 Bq/L in water production bores.

The existing groundwater near the ore body is unsuitable for human or stock consumption due to high salinity levels (up to three times the concentration of seawater). It is unlikely that any of the water would be consumed, and there is no pathway for potential exposure to people or livestock.

4.8.2 Lake Maitland

Gamma Dose Rate

A total of 502 measurements were taken during baseline monitoring; the gamma radiation levels ranged from 0.08 µSv/h to 0.36 µSv/h with the span due to the variability of the underlying uranium mineralisation.

The predicted average gamma dose for a miner at Lake Maitland is less than 1 mSv/a. This is well below the occupational dose limit.

Radon

Radon sampling undertaken to characterise the radon and radon progeny present at Lake Maitland has shown the average concentration of radon to be 69 Bq/m^3 with a minimum of 24 Bq/m^3 and a maximum of 192 Bq/$m^{3.}$

Radionuclides in Dust

The background concentration of particulate metals has been assessed through analysis of total suspended particulate filter papers from the alpha radioactivity monitoring program. The results indicated that all particulate metal concentrations were below the analytical method limit of detection, including radionuclides.

Radionuclides in Soils

Surface soil sampling has been undertaken in conjunction with vegetation sampling. The results indicate that the surface soil has naturally elevated concentrations of selenium, vanadium and uranium when compared with human health and ecological screening levels.

Radionuclides in Groundwater

A groundwater monitoring program has collected samples from 16 wells.

Comparison of the filtered groundwater samples with the Australian and New Zealand Environment Conservation Council (ANZECC) trigger values for metals indicated:

- Maximum baseline concentrations of radium-226 and radium-229, gross alpha and gross beta were elevated compared with livestock drinking water trigger values; and
- Maximum baseline concentrations of uranium were elevated compared with the guideline value.

4.9 Flora and Vegetation

Implementation of the Proposal would be unlikely to alter the conservation status of any vegetation communities and would not significantly impact any flora currently recognised as having conservation significance.

Impact management would include minimising land clearance, controlling groundwater drawdown through barriers in the mining areas, limiting dust by progressive clearance and integrating clearing and rehabilitation schedules, and strict enforcement and monitoring of groundwater use. Surveys have been undertaken in conjunction with Traditional Owners at Millipede and Lake Maitland and the results demonstrate that implementation of the Proposal would not adversely impact on traditional sources of bush tucker.

4.9.1 Millipede

Baseline surveys have identified five zones of vegetation: *Tecticornia*, Fringing vegetation, a foredune system, a rear dune system and a calcrete platform.

No matters were noted in the EPBC Act Protected Matters Database search and no Declared Rare Flora were found. A total of 21 priority flora were listed in the Western Australian Department of Environment Regulation (DER) database, of which six were Priority 1 taxa, 13 were Priority 2 taxa and the remaining two were Priority 3 taxa.

During reconnaissance surveys, the condition of the vegetation was generally assessed as being good to very good.

4.9.2 Lake Maitland

Key findings from baseline flora and vegetation surveys have been:

- No Declared Rare Flora, Priority Species, Threatened Ecological Communities or geographically restricted species identified;
- A total of 340 taxa (including subspecies and variants) from 39 families and 83 genera were identified during ecological surveys; and
- Five major vegetation types were identified: Salt Lake, Kopi Ridge, Calcrete, Hill and Stony Plains, and Plains vegetation.

4.10 Fauna

Both Millipede and Lake Maitland are within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia comprising the northern part of the Yilgarn Craton and encompassing the transitional zone between the eucalypt dominated environs of south-western Australia and the mulga/spinifex dominated areas of central Australia.

More than 7% of the land in the Murchison Bioregion has been vested in conservation reserves. The closest wetland of significance to the Proposal is the Lake Carnegie System, approximately 70 km west of Lake Way. The fauna and habitats of the Millipede and Lake Maitland areas and surrounds are well surveyed.

The main potential impact on terrestrial fauna would be removal or fragmentation of habitat through land disturbance and vegetation clearance. Disturbance and clearance activities would be progressive to allow fauna species to establish habitat in other areas.

4.10.1 Fauna Habitats

Millipede

The following 19 broad fauna habitats exist within and in the vicinity of the Proposal:

- Melaleuca stands;
- Open mulga woodland over spinifex;
- Eucalypt woodland;
- Mulga woodland over chenopod shrubland;
- Mallee/mulga complex over spinifex;
- Mulga over calcrete;
- Minor drainage line;
- Red sand dune;
- Chenopod floodplain;
- Creek line with river red gum and *Casuarina*;
- Open mulga woodland over spinifex on hardpan;
- Major drainage line;
- *Acacia victoriae* on calcrete;
- Mixed shrubland floodplain;
- Mulga over quartz loam;
- Claypan;
- Stony rise;
- Samphire flats; and
- Salt lake.

Lake Maitland

There are ten fauna habitats within the Proposal area and its surrounds. They are:

- Lake edge spinifex;
- Calcrete plain;
- Kopi dune;
- Mallee spinifex sandplain;
- Mulga woodland/shrubland plain;
- Samphire flats;
- Spinifex sandplain;
- Woodland/shrubland on calcrete flats;
- Shrubland on sandplains; and
- Clayplan.

4.10.2 Vertebrate Fauna

Millipede

Based on a review of database searches and previous surveys in the region, it is estimated that 326 terrestrial vertebrate fauna species have the potential to occur within the Proposal area and its surrounds. These comprise 43 mammals (31 native and 12 introduced), 182 birds, 95 reptiles and six amphibian species.

Within the Proposal area and surrounds, 216 have been recorded in surveys, comprising 31 mammals (20 native), 75 reptiles, 105 birds and five amphibians.

No threatened fauna species listed under the EPBC Act or Priority Fauna Species listed under the DER Priority Species List were observed during field surveys conducted for the Proposal. No threatened or priority fauna have been recorded during previous surveys conducted by others in the Proposal area.

During Toro's baseline fauna surveys, two fauna species listed under the EPBC Act as Migratory were recorded: the Rainbow Bee Eater (*Merops ornatus*) and the Sharp-tailed Sandpiper (*Calidris acuminatus*).

Lake Maitland

Three baseline surveys have identified 28 mammal species (19 native and nine introduced), 68 bird species and 46 reptile species. No amphibians were encountered.

4.10.3 Terrestrial Invertebrates (Short-range Endemics)

Millipede

Surveys have collected specimens of mygalomorph spiders, centipedes, scorpions, molluscs and pseudoscorpions. With the exception of two scorpion species, no specimens were considered by experts at the Western Australian Museum to be short-range endemics. Most of the specimens collected are widely distributed in the semi-arid zone of Western Australia. The scorpions could not be identified to species level.

Lake Maitland

Five species of short-range endemics have been recorded in locations that would be affected by proposed development. Four of the species have also been recorded outside these locations while infrastructure can be relocated to avoid any impact on the fifth species.

4.10.4 Subterranean Fauna

Stygofauna and troglogauna (subterranean fauna) spend their entire lifecycle below ground. They are predominantly invertebrates, displaying characteristics typical of a subterranean existence including a reduction or absence of pigmentation, absence or reduction of eyes and the presence of extended locomotory and sensory appendages.

Studies of subterranean fauna by Toro have substantially increased the state of knowledge of species diversity in the region and markedly improved information available from previous studies conducted by the Western Australian Museum.

As a result, it is predicted that implementation of the Proposal would have a very modest to negligible impact on subterranean fauna because there are wide distributions of many of the species detected through the calcrete aquifers, as well as neighbouring calcretes; removal of substrate by mining would result in loss of a very small proportion of the available subterranean fauna habitat; water abstraction would be manage to limit changes to groundwater levels; water barriers would be implemented to reduce the magnitude and extent of dewatering impacts; and the operational life of the Project would be relatively short. To ensure the outcome aligns with Toro's prediction, it would implement a Subterranean Fauna Management Plan to cover both stygofauna and troglofauna.

Millipede

Baseline subterranean fauna studies commissioned by Toro identified 22 stygofauna species or morphospecies in the Proposal area and surrounds. Of these, 13 species were relatively widely distributed, having been collected from other calcrete systems. Sampling for troglofauna at Millipede in 2015 recorded three species, all of which had been recorded in previous surveys.

Lake Maitland

Troglofauna sampling found that the Barwidgee calcrete hosted a relatively diverse troglofauna assemblage. Nine species were collected in 24 of the bores sampled.

Lake Maitland does not have a diverse or abundant stygofauna community. The key outcomes of baseline studies were:

- Approximately 500 specimens were collected during four surveys at 50 sampling sites;
- At all sites, inside and outside the Proposal area, the number of specimens caught was generally low, with the majority of sites yielding less than 10 specimens; and
- At least half of the taxa recorded from groundwater at Lake Maitland have a known distribution outside the Proposal area.

4.10.5 Threatened and Priority Ecological Communities

Millipede

No Threatened Ecological Communities (TEC) as defined by the Department of Parks and Wildlife have been identified as occurring within the Proposal area or in surrounding areas.

There are also no World Heritage areas, National Heritage areas, Ramsar wetlands or TECs as defined under the EPBC Act within survey areas.

Two Priority Ecological Communities (PECs) were identified as potentially intersecting the Proposal area. These were:

- Hinkler Well calcrete (stygofauna) community: This is a Priority 1 ecological community, located to the west of Millipede. The buffer for this PEC is 21,000 m, which partly overlaps the Proposal area.

- Lake Violet calcrete (stygofauna) community: This is a Priority 1 ecological community located between the West Creek borefield and the area where mining would occur.

Lake Maitland

No TECs, PECs, Declared Rare Flora or geographically restricted species have been identified during targeted field surveys.

There are also no World Heritage Areas, National Heritage areas, Ramsar wetlands or TECs as defined under the EPBC Act within the Proposal area.

4.11 Conservation Estate

The nearest conservation reserve to both Millipede and Lake Maitland is the 53,248 ha Wanjarri Nature Reserve, located approximately 80 km to the south-east of Millipede and 40 km to the south-west of Lake Maitland. The reserve is surrounded by pastoral and mining activities. Approval was given in 1994 for the construction of a natural gas transmission pipeline running from north to south across the reserve.

Toro's activities would not affect the reserve, either directly or indirectly.

4.12 Traffic and Finished Product Transport

A traffic analysis has shown that the construction and operational phases of mining at Millipede and Lake Maitland would not have a significant impact on existing traffic flow in the region. The ore haul road from Lake Maitland to Centipede does not impact existing public roads.

The increase in traffic as a result of construction, operation and product transport would not affect current traffic conditions on the Goldfields Highway.

The product transport arrangements already assessed (EPA Assessment 1819 and EPBC 2009/5174) would also apply to product from mining at Millipede and Lake Maitland.

All of the product from the Extension to the Wiluna Uranium Project would be transported in 205 L drums weighed, labelled and given an identification number and then sealed, stacked and braced in sealed sea containers on site for transport on the Goldfields and Eyre highways into South Australia for final shipment from Port Adelaide or transfer by rail to Darwin Port. The rate of transport already assessed (up to five containers per month) would not change with mining at Millipede and Lake Maitland, but this would occur over a longer period.

An assessment of potential radiation exposure from finished product transport has shown that any exposure to members of the public and truck drivers would be well within international limits. Toro's transport management plans draw on other Australian mining company experience in transporting and exporting for the past 20 years without incident.

5 ENVIRONMENTAL FACTORS, POTENTIAL IMPACTS AND MANAGEMENT

The following preliminary key environmental factors relevant to the Proposal were identified by the EPA in accordance with *Environmental Assessment Guideline for Environmental principles, factors and objectives* (EAG 8).

Table 5.1 identifies the EPA's objective for each of the preliminary key environmental factors, their potential impacts, proposed management measures and predicted outcomes.

Table 5.1: Summary of Preliminary Key Environmental Factors, Potential Impacts and their management for the Extension to the Wiluna Uranium Project

Environmental Factor: Flora and Vegetation – PER section 9	
Environmental Objective	To maintain representation, diversity, viability and ecological function at the species, population and community level.
Potential Impacts	• Clearing up to 1581.8 ha of native vegetation; • Indirect impacts on vegetation through increased levels of dust deposition in close proximity to roads and other trafficked areas; • Impacts on plant-water relations as a result of changes to surface flow paths or to the duration or frequency of flow in localised areas; • Introduction and spread of weeds into mining areas and adjacent native vegetation through movement of vehicles and materials during project construction and operation; • Radiation impacts on flora and vegetation; • Uptake of radionuclides or other contaminants by vegetation established on or near backfilled pits; • The introduction of plants from outside the local area; and • During mine closure, the failure to re-establish self-sustaining vegetation.
Management Measures	A formal land clearing permit system has been established to prevent accidental clearing. Vegetation clearing procedures during construction and operation would include weed hygiene and dust control requirements. The disturbance footprint would be minimised by co-locating facilities to the extent practicable. Results of soil seed bank studies would be taken into account in developing a rehabilitation strategy. The strategy would include provision for acquisition of local provenance plant propagules prior to commencement of clearing. Other management strategies would include: • Backfilling of pit voids; • Progressive rehabilitation using local provenance vegetation; • Implementation of Vegetation and Flora Monitoring Plan; • Implementation of Groundwater Dependent Vegetation Research Plan; • Implementation of a Survey and Research Plan to conserve and improve the scientific knowledge of *Tecticornia* species; and • Implementation of Mine Closure and Rehabilitation Plan.
Commitments	Toro's engineering studies to complete design of the Proposal would take into account areas where priority flora is known to exist and infrastructure would be located to minimise any disturbance. The Flora and Vegetation Monitoring Plan (within the Environmental Management Plan in Appendix 4 of the PER) includes monitoring, reporting and other actions to mitigate impacts on flora and vegetation from implementation of the Proposal, including on groundwater dependent vegetation and *Tecticornia* species. Toro would undertake progressive rehabilitation of disturbed areas to ensure they are returned to agreed pre-mining conditions as soon as practicable. Rehabilitated land would be left in a safe and stable condition and would eventually be suitable for pastoral and traditional purposes.
Outcomes	Toro does not anticipate that the implementation of the Proposal would affect the conservation status of any plant species or particular ecosystem. Toro has concluded that the Proposal can be constructed, operated and closed in a way which maintains the abundance, diversity, geographic distribution and productivity of native plant species in the area.

Environmental Factor: Terrestrial Fauna – PER section 10	
Environmental Objective	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.
Potential Impacts	• Disturbance of up to 1581.8 ha of native vegetation which may provide habitat for native fauna; • Alienation of land within active operational areas from pastoral uses during implementation of the Proposal; • Fauna injuries or death as a result of fire or collision with vehicles; • Exposure of terrestrial fauna to radioactive materials or other contaminants; • Behavioural changes arising from changes in noise or light levels; • Changes in fauna movements as a result of changes in habitat connectivity; • Entrapment of fauna in open excavations; • Attraction of fauna (including feral herbivores or carnivores) to areas used for storage of water or food wastes; and • Introduction of pests and feral animals.
Management Measures	The locations of key fauna habitat would be taken into account when refining the disturbance footprint: important or better quality habitat would be avoided to the extent practicable. Land would be progressively rehabilitated to a condition functionally similar to the pre-mining condition. Other management strategies would include: • Development of risk-based design criteria for radiation and other pollution protection controls; • Dust suppression and control mechanisms designed to meet Best Practicable Technology standards; • Designs to minimise contaminant release to surface water and groundwater; • Designs to contain designated materials within a restricted release zone; and • Development of: o Fauna Management Plan; o Dust Environmental Management Plan; o Radiation Management Plan; o Radiation Waste Management Plan; o Radiation Monitoring Plan; and o Noise Management Plan. Land clearing procedures would include practices aimed at reducing fire hazards, controlling vehicle speed and minimising noise. Open excavations would be monitored (in the case of temporary works) or fenced to prevent entrapment of fauna. Pits would be backfilled. No water impoundments would remain after mine closure. Food waste would be managed appropriately to prevent access by scavengers.
Commitments	To manage the potential impacts on terrestrial fauna, Toro would include in its Environmental Management Plan for the Proposal detailed fauna management measures, such as specific policies and standard operating procedures. Toro would also educate all employees and contractors about their responsibilities in ensuring that fauna management and protection is demonstrated to a high standard.

Environmental Factor: Terrestrial Fauna – PER section 10	
Outcomes	The Proposal would impact vertebrate fauna assemblages on a local scale through direct loss of fauna during land clearing, loss of habitat and indirect impacts. It would be unlikely to have a significant impact on any fauna species, including any conservation significant fauna species, due to the presence of similar habitat in close proximity to the Proposal area and in the wider region. The Proposal would not have any significant impact on putative SRE invertebrate fauna species, as none are restricted in their known occurrence to the Proposal area. The Proposal would not affect representation, diversity, viability and ecological function of terrestrial fauna at the species, population and assemblage level.

Environmental Factor: Terrestrial Environmental Quality – PER section 11	
Environmental Objective	To maintain the quality of land and soils so that the environment values, both ecological and social, are protected.
Potential Impacts	• Spreading of mineralised material outside the mining areas during ore hauling process; • Increasing radiation levels above background by exposing previously covered uranium ores; • Loss or deterioration of topsoil and subsoil through poorly planned stockpile locations leading to poor rehabilitation outcomes; • Localised contamination of soils from erosion of ore; • Spread of mineralisation in the form of dust; • Localised soil contamination from spills; and • Long-term contamination of groundwater due to seepages from the TSF.
Management Measures	• Efficient pre-stripping of mining and clearing areas • Topsoils and subsoils stripped and separately stored for later use in rehabilitation • Ore transported on dedicated haul roads in covered vehicles to prevent dispersion of ore dust • Ore for processing stockpiled 4 km from boundaries of mining lease • At closure, any mineralised materials returned to the pit • Regular dust monitoring
Commitments	• Toro will undertake further geochemical modelling of the effects of uranium in local groundwater. This modelling will be done prior to the submission of the Project's Mining Proposal and the results of the modelling will be included in TSF design in the Project's Mine Closure and Rehabilitation Plan. • All mine pits would be bunded to a level that withstands a maximum PMP event as required in Federal Ministerial Condition 16 (EPBC 2009/5174) • As far as practicable all stockpiles would be located outside of drainage lines and where this was not possible, diversions around the stockpiles would be created. • All ore and waste stockpiles would be bunded to catch run off and flow-through water and this water would be used to supress dust on the stockpiles. • Further engineering studies would investigate methods of dust mitigation or control throughout the Project, including stockpiles and the processing plant. • The Project would practise progressive rehabilitation and aim to return waste, overburden and soils as a matter of practice. • Where soils need to be stockpiled, stockpile height would be capped at 2 m and regular monitoring and inspections shall take place.

Environmental Factor: Terrestrial Environmental Quality – PER section 11	
Outcomes	Based on the studies undertaken and the planned future studies and monitoring program, Toro predicts that the Project would have no long-term impacts on the quality of the terrestrial environment.

Environmental Factor: Subterranean Fauna – PER section 12	
Environmental Objective	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.
Potential Impacts	• No more than 1581.8 ha of land would be disturbed during mining; where subterranean fauna are present in these areas, there would be a loss of habitat and potential loss of subterranean diversity; • Habitat loss or alteration may also occur within the areas lying within the groundwater drawdown cones around the water supply bores and mine pits, and in any areas used for recharging; and • Loss of ecosystem functionality and habitat for subterranean fauna.
Management Measures	To minimise impacts on subterranean fauna, Toro would adopt strategies to reduce water use and the need for dewatering. These would include: • Avoiding areas of known significant subterranean fauna communities and habitats during Proposal design and planning; • Use of barriers to minimise the need for dewatering the area immediately surrounding the mine voids; • Recycling of process water and use of low water demand ore extraction technologies; • Recharge of groundwater intercepted by the pit dewatering system; • Implementation of a Groundwater Drawdown Monitoring and Management Plan; and • Implementation of a Subterranean Fauna Management Plan.
Commitments	• Continuous monitoring of groundwater levels; • Ensure that drawdown levels are below threshold values; • Use of water barriers around mine pits to reduce dewatering; • Ongoing periodic sampling of bores for both stygofauna and groundwater chemistry to ensure any changes are detected as soon as possible so that impacts can be mitigated; • Aquifer reinjection to occur in areas where there is no connectivity between the hypersaline and fresh water systems to protect stygofauna populations; • Continuous monitoring of groundwater salinity and TDS in the Barwidgee Calcrete PEC to ensure water quality is maintained; • Implement the groundwater management plan at the commencement of the operational phase; and • The development of a troglofauna monitoring program to include measurable habitat parameters, such as temperature and relative humidity of the subterranean environment, as well as sampling using litter trapping and/or net haul sampling.

Environmental Factor: Subterranean Fauna – PER section 12	
Outcomes	The long-term conservation risks to subterranean fauna assemblages at Millipede and Lake Maitland are predicted to be low because: • There are wide distributions of many of the species detected through the calcrete aquifers, as well as neighbouring calcretes; • The confined influence of dewatering and the large area of saturated habitat mean that assemblages would not be impacted by mining; • Reinjection would occur adjacent to Lake Maitland which acts as a regional sink; reinjected water would not spread upstream, but would flow back to the lake meaning the impact is kept as low as possible; • Water barriers would be implemented to reduce the magnitude and extent of dewatering impacts from pit dewatering; and • The operational life of the Proposal would be relatively short.

Environmental Factor: Inalnd Waters Environmental Quality and Hydrological Processes – PER section 13	
Environmental Objective	To maintain the quality of groundwater and surface water sediment and biota so that the environmental values, both ecological and social, are protected. To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected.
Potential Impacts	• Groundwater quality affected by tailings seepage, water reinjection or accidental spills; • Precipitation of solids due to mixing of groundwater chemistry during the reinjection process; • Increased erosion and sediment transport as a result of land clearing or earthworks which could increase turbidity of surface water; • Contamination of surface water as a result of spillage of fuels or reagents; • Contamination of surface water as a result of loss of containment of ore or pregnant liquor solution; • Mechanical disturbance of biological crusts affecting soil surface stability in localised areas; • Altered water or sediment chemistry affecting emergence of dormant communities in the lakes, altering food cycles; • Discharge of contaminants resulting in uptake by benthic flora or fauna and introduction of the contaminants in the local food chain; • Changes to flows from localised drawdown due to mining and dewatering; and • Construction of access roads, haul roads, drainage structures and fill platforms with the potential to alter the direction, depth and velocity of surface flows after rainfall events and change the frequency or the duration of water ponding in some areas.

Environmental Factor: Inalnd Waters Environmental Quality and Hydrological Processes – PER section 13	
Management Measures	For groundwater: • Use of barriers to minimise the need for dewatering of the area immediately surrounding the mine voids; • Recycling of process water and use of low water demand ore extraction technologies; • At Lake Maitland, local aquifer reinjection after mine dewatering; and • Implementation of Groundwater Drawdown Monitoring and Management Plan. For surface water: • Scheduling of clearing to avoid times when intense rainfall events are more likely; • Provision of sediment control structures downstream of stockpiles or disturbed areas; • Sizing of drainage channels and culverts to prevent creation of water shadows or ponding; • Standard engineering controls to limit flow velocities; • Appropriate design and siting of fuel and waste storage facilities; • Development and implementation of water management to guide operating strategies under both routine and extreme weather scenarios; • Water management systems to emphasise containment and reuse, rather than discharge, of any surplus water; and • Implementation of a Surface Water Environmental Management Plan.
Commitments	• Toro would not abstract more than 0.7 GL/a from the proposed West Creek borefield in accordance with EPA Assessment 1819 and EPBC 2009/5174. • Groundwater drawdowns would be monitored regularly and, if required, water abstraction would be modified to ensure protection of water-dependent biota; • Toro would not abstract more than 1.3 GL/a from the proposed Lake Maitland borefield. If water abstraction interferes with the quality or quantity of groundwater available to exisiting groundwater users, Toro would make good the water supply under a water sharing agreement with the affected parties; • Further work would be undertaken to optimise the design and location of groundwater reinjection systems at Lake Maitland. The reinjection system would be designed and operated to prevent excessive mounding of groundwater and to prevent salt water intrusion that could affect stygofauna communities of Barwidgee Calcrete; • Pipelines conveying saline water from mine dewatering would be installed within bunds to limit the risk of uncontrolled release of saline water in the event of a pipeline failure; • Low permeability barriers would be installed to limit water influx to the Millipede and Lake Maitland mine pits consistent with EPA Assessment 1819 and EPBC 2009/5174. Water from mine dewatering would be used preferentially to satisfy production requirements. Surplus water from mine dewatering at Lake Maitland would be reinjected or evaporated in lined basins. The reinjection system will be designed and operated in accordance with relevant principles set out in DoW's *Operational policy 1.01 — Managed aquifer recharge in Western Australia* (2011); • Toro will undertake further geochemical modelling of the effects of uranium in local groundwaters as the result of seepage from the TSF. This modelling will be done prior to the submission of the Project's mining proposal and the results of the modelling will be included in that proposal and the Project's Mine Closure and Rehabilitation Plan; and • All mine pits would be bunded to a level that withstands the probable maximum precipitation event as required by EPBC 2009/5174.

Environmental Factor: Inalnd Waters Environmental Quality and Hydrological Processes – PER section 13	
Outcomes	Implementation of the proposed water management strategies is expected to: • Maintain aquifer water levels required for the protection of water-dependent biota; • Eliminate the need for surface discharge of mine dewatering water during routine operations; • Make best use of saline groundwater, so as to minimise the need for consumption of fresh to brackish groundwater; and • Maintain groundwater quality surrounding the in-pit tailings storages both during mining operations and post-closure.

Environmental Factor: Human Health – PER section 14	
Environmental Objective	To ensure that human health is not adversely affected.
Potential Impacts	• Dust emission from areas where ore mineralisation is near surface; • Radon emanation from disturbed areas where mineralisation is near surface; • Contamination of air, soils, sediments, surface or groundwater by radionuclides; • Gamma exposure from potential build-up of salts; • Failure or breach of the waste repository over its design life with potential impact to air and water; • Radiation exposure to members of the public on the rehabilitated land form; • Accident during transport resulting in release of radioactive material from containment; • Radiation exposure to members of the public and workers during transport; and • Increased noise and traffic hazard.
Management Measures	• Risk-based design criteria for radiation protection controls; • Dust suppression and control mechanisms meeting Best Practicable Technology standards; • Project design to minimise radon emanation potential; • Project design to minimise impact on surface and groundwater; • Project design to contain designated materials within a restricted release zone; • Implementation of: o Radiation Management Plan; o Radioactive Waste Management Plan; o Mine Closure and Rehabilitation Plan; o Transport Management Plan to include emergency response and security procedures; and o Continuing community consultation on product transport routes.

Environmental Factor: Human Health – PER section 14	
Commitments	Toro's commitment to a range of management and operational measures to maintain radiation doses As Low as Reasonably Achievable would ensure that any dose arising from implementation of the Proposal would be well within the limit. Toro would undertake regular monitoring of radionuclides in dust and soils. The timing and frequency of this sampling would be included in the RMP. Should mining be approved, Toro would maintain bush tucker surveys: • Within the ore body; • Upwind of prevailing winds; and • In regional locations (e.g. Barwidgee Station). The timing of surveys would take into account the availability of the fruits, nuts and seeds of bush tucker. Monitoring sites would be established downwind of the prevailing wind direction and at various distances from operations with soil samples collected from each site. Biannual monitoring would be undertaken in autumn and spring to capture varying wind directions, and to account for the various flowering and seeding times of these rain-responsive plants.
Outcomes	Based on its management measures and commitments, and with an approved RMP in place, Toro concludes that the Proposal would have no adverse impacts on human health or on the health of non-human biota.

Environmental Factor: Heritage – PER section 15	
Environmental Objective	To ensure that historical and cultural associations, and natural heritage, are not adversely affected.
Potential Impacts	• Disturbance of heritage features or places; and • Temporary or permanent constraint on traditional cultural activities.
Management Measures	• Continuing consultation with Aboriginal people; • Heritage surveys to identify sites of significance to Aboriginal people; • Assessment of impacts of any Aboriginal sites of significance in accordance with EPA Guideline 41; • Negotiation of mining agreements with Native Title Holders and Claimants to include a Heritage Management Plan and heritage management rules to establish arrangements for protecting and managing Aboriginal heritage and regular consultation and liaison with Traditional Owners about Project impacts during the construction and operational phases; and • Community development programs in conjunction with Traditional Owners.

Environmental Factor: Heritage – PER section 15	
Commitments	• Avoidance where practicable of registered sites and other heritage places during mine development and operation; • Development and implementation of a Cultural Heritage Management Plan at both Millipede and Lake Maitland; • Completing mining agreements with Native Title Holders and Claimants; • Ensuring all employees, contractors, sub-contractors and consultants have cross-cultural awareness training; • Procedures for dealing with the unanticipated discovery of cultural heritage remains; and • Further refurbishment of the heritage-listed Mine Manager's House at Wiluna to enable it to be a functioning building used for community purposes.
Outcomes	No adverse effects on historical or cultural associations.

Environmental Factor: Rehabilitation and Decommissioning – PER section 16	
Environmental Objective	To ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner.
Potential Impacts	• Residual soil or groundwater contamination; • Altered surface levels or drainage patterns; • Increased erosion; • Loss of land/soil productivity; • Increased weed occurrence; • Reduced visual amenity; • Constrained access to land; • Residual human health risks; and • Long-term financial liabilities.
Management Measures	Implementation of Mine Closure and Rehabilitation Plan incorporating design features and management measures for the safe and effective operation of the mine and TSF, the progressive rehabiliation of mine pits and closure of uranium mining and processing facilities (whether planned or unplanned). Conducting further research expanding knowledge on *Tecticornia.*
Commitments	Closure and rehabilitation at Millipede and Lake Maitland would be carried out progressively. On closure of this Proposal, if approved, Toro is committed to leaving the land on which the Proposal would be implemented in as close to a pre-mining state as practicable, or in a state that fits with the post-closure land use proposed by key stakeholders, Native Title Holders and Claimants in particular. All above ground buildings and structures would be removed and any landforms developed in the course of implementing the Proposal would be shaped and contoured to blend in with the surrounds. Radiation in areas where mining has been undertaken would be returned to levels at or below pre-mining. Regular monitoring of bush tucker would be undertaken to ensure the bioaccumulation of radioactive elements in food sources was not occurring.
Outcomes	Implementation of the Mine Closure and Rehabilitation Plan would ensure the land is returned as close as practicable to its pre-mining use.

Environmental Factor: Offsets – PER section 17	
Environmental Objective	To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets.
Potential Impacts	• Disturbance of up to 1581.8 ha of native vegetation; • Loss or alteration of terrestrial and subterranean fauna habitat; • Changes in fauna movements as a result of changes in habitat connectivity; • Groundwater quality affected by tailings seepage or accidental spills; • Changes to flows from localised drawdown due to mining and dewatering; and • Contamination of air, soils, sediments, surface or groundwater by radionuclides.
Management Measures	• Sequential mining facilitating adaptive management; • Progressive rehabilitation of the mining footprint; • In-pit tailings disposal to avoid above ground storage and limit disturbance; • Use of perimeter groundwater barriers to limit dewatering and impacts on subterranean fauna and vegetation; and • Sequential mining facilitating adaptive management.
Commitments	As an already agreed offset, Toro would implement a Survey and Research Plan to further the knowledge of *Tecticornia* species. The outcomes of the research would be applied to conservation of *Tecticornia* and rehabilitation of any *Tecticornia* vegetation communities disturbed by implementation of this Proposal.
Outcomes	Any impacts associated with implementation and subsequent closure of the Proposal would be avoided, minimised or rehabilitated so that there are no material residual impacts required to be counterbalanced by the application of offsets.

6 CONCLUSIONS

The Wiluna Uranium Project, including its extension, presents the opportunity to provide a new and alternative source of uranium to international markets. The local and regional economic benefits (business and employment opportunities, and royalties and other revenues to government) are important.

Toro has prepared this PER in consultation with the Western Australian EPA and the federal DoE and in accordance with the EP Act (WA) and the EPBC Act (Cwlth).

Based on the legislation, regulations, policies, standards, guidelines and other relevant matters which have guided the development of this Proposal together with Toro's very extensive baseline survey work and understanding of the Proposal, it is concluded that the design features, management controls and mitigation measures described within the PER would enable potential impacts to environmental, socio-economic, health or cultural aspects to be managed to acceptable levels, whilst realising the benefits of the Proposal outlined above.