

Lagoon Creek Resources Pty Ltd
A subsidiary of Laramide Resources Limited

Lagoon Creek Resources Pty Ltd

**EXPLORATION OPERATIONS
MINING MANAGEMENT PLAN
AND PUBLIC REPORT**

EL23573

LAGOON CREEK

Authorisation 0332-01

2017/18




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AMENDMENTS

Section	Amendments
All sections of report	To address new MMP format

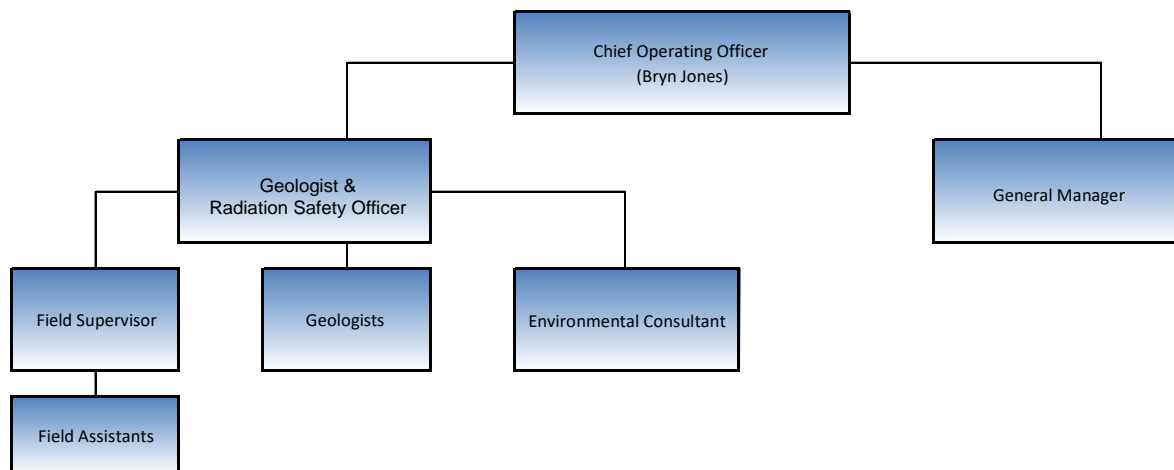
1 OPERATOR DETAILS

Lagoon Creek Resources Pty Ltd (LCR) is an Australian subsidiary of Laramide Resources Ltd, a company listed on both the Australian (ASX) and Toronto Stock Exchange (TSX). LCR is predominantly focussed on uranium exploration and has exploration licenses in the Northern Territory and Queensland.

Table 1: Lagoon Creek Resources Contact Details

Street Address:	Level 3, 445 Upper Edward St, Spring Hill, QLD, 4000
Postal Address:	PO Box 103, Spring Hill, QLD, 4004
Phone:	(07) 3831 3407
Key Personnel:	Bryn Jones: Chief Operating Officer bryn@laramide.com

1.1 Organisational Structure



1.2 Workforce

LCR’s proposed workforce within the project area at any one time would average 3-10 people as both permanent and casual staff (including Traditional Owners). Contractor numbers vary, but could average 5-7 people.

LCR has a policy to employ local Traditional Owners where possible. Employment arrangements will be flexible so that local employees can attend to their community and cultural obligations. Employment opportunities will include Cultural and Environment Monitors (CEMs) and Exploration Field Assistants. Training will be provided as required.

2 IDENTIFIED STAKEHOLDERS AND CONSULTATION

The following people and organisations have an interest in, or may be affected by the Debbil Debbil Creek project:

- Aboriginal Traditional Owners;
- Wollogorang Station pastoral lease holder, NT Portions 674 (PPL1113);
- Weeds Management Branch, NT Department of Environment and Natural Resources (DENR);
- Minerals and Energy, NT Department of Primary Industry and Resources (DPIR);
- Bush Fires Council of the NT;
- NT WorkSafe.
- Company shareholders.

LCR has contact with Traditional Owners and pastoral lease owners throughout the year. Contact is generally made through a combination of telephone calls, emails and meetings in person.

An exploration access agreement with the pastoral lease holder, Wollogorang Cattle Company Pty Ltd, is in place, and evidence has been provided to the Department.

3 PROJECT DETAILS

Exploration Licence 23573 was applied for by Arafura Resources NL in 2002 and the title was granted on 23 December 2003. In 2005, Arafura entered an agreement with Lagoon Creek Resources, whereby Lagoon Creek Resources can earn an interest in EL23573. Title was transferred to NuPower Resources on 14 March 2007 as a result of the demerger process and formation of the new company. NuPower Resources has been subsequently renamed Central Australian Phosphate (CAP). LCR is conducting exploration on EL23573 under the JV agreement with CAP; CAP has also recently been taken over by Verdant Minerals Limited (Previously named Rum Jungle Resources Ltd). The tenements details are summarised in Table 2.

The tenement is adjacent to the Queensland border, approximately 250km south-east of Borroloola, with the area of proposed exploration wholly within the Wollogorang Station pastoral holding. Access is via the highway from Doomadgee to Borroloola and thence via station tracks. The tenement location plan is shown on **Figure 1**.

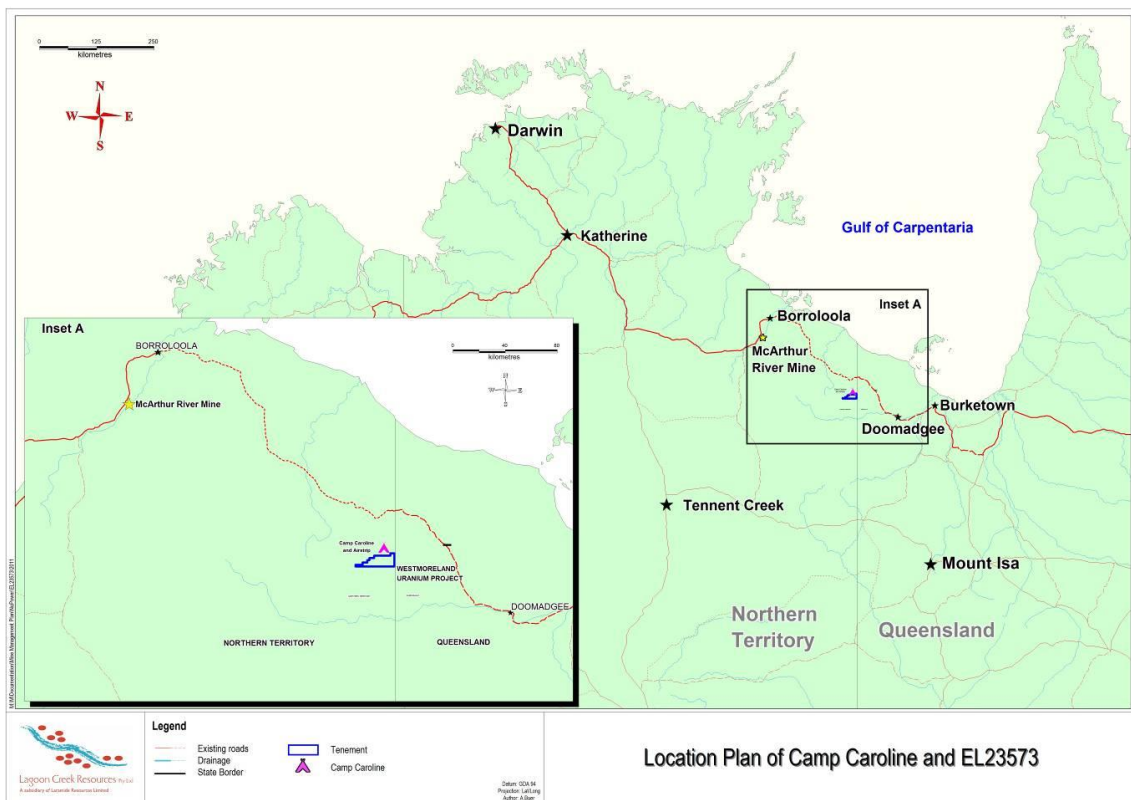


Figure 1: Tenement and Camp Caroline Location Plan

Most exploration undertaken on EL23573 will be based out of LCR’s Camp Caroline located within EL29898. The location of the Camp is shown on **Figure 2**. LCR operate several exploration permits for minerals (EPMs) in Queensland and exploration licenses (ELs) in the Northern Territory which utilise Camp Caroline. These include EPMs 14558, 14672 and 14967 in Queensland, and ELs 29898, 9319, 9414 and 23573 in the Northern Territory. Please refer to Figure 2 for a map showing the location of Lagoon Creek Resources’ tenements.

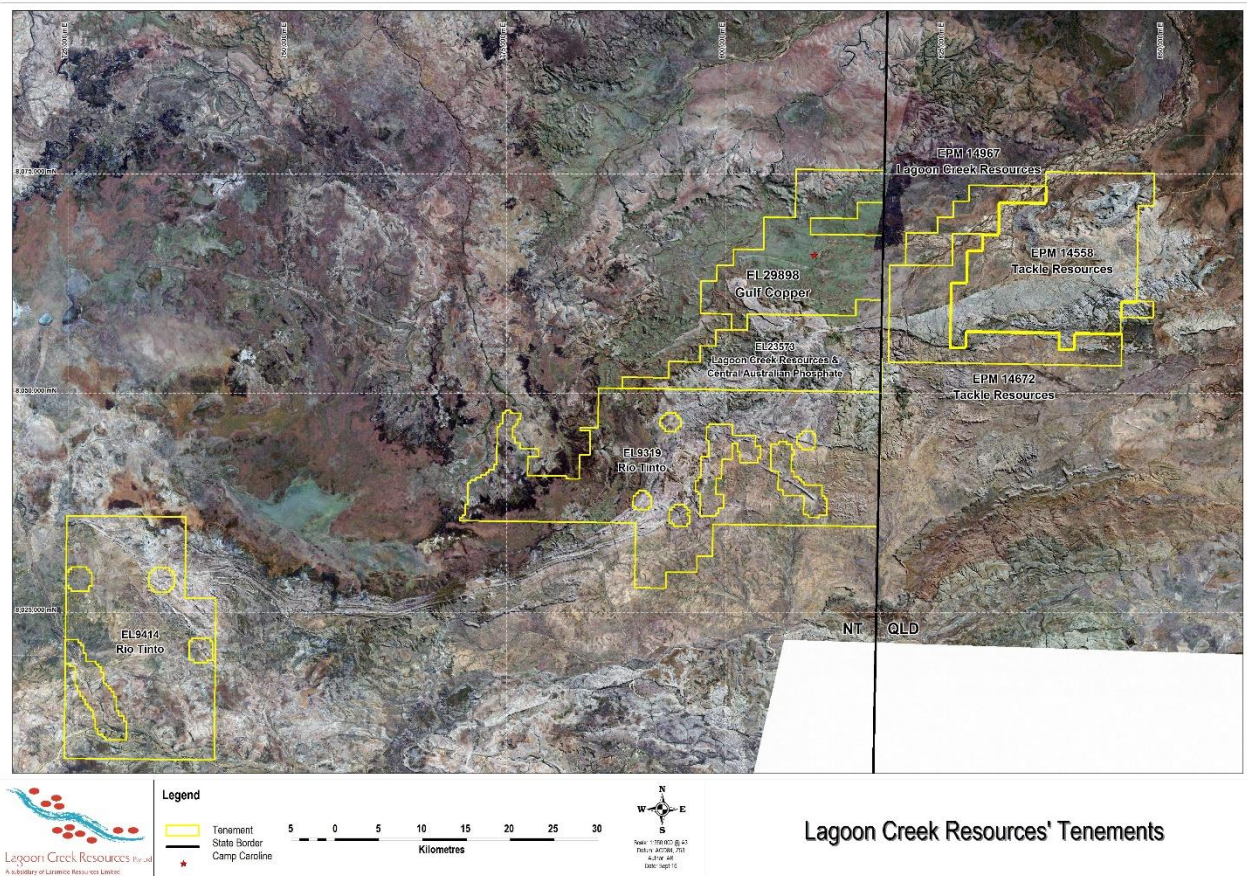


Figure 2: Lagoon Creek Resources’ Tenements

Table 2: Lagoon Creek Project Exploration Licence

Exploration License (EL)	Title Holders	Date of Grant	Expiry Date	Area (Sub-blocks)	Area (sq km)	Current Status
23573	Lagoon Creek Resources Pty Ltd (50%) & Central Australian Phosphate Ltd (50%)	23/12/2003	22/12/2017*	65	190	Renew Retained

A Tenement Report extract from DPIR TIS is attached as Appendix 2.

*Renewal application will be lodged.

3.0.1 Site Infrastructure & Location

No site infrastructure has been established on EL23573 covered by this MMP.

When exploration is undertaken the site is accessed from a camp ("Camp Caroline") which has been established on an adjacent tenement.

3.0.2 Transport and Site Access

Access to the tenement is generally gained by 4WD via the seasonally open Savannah Highway, then via established Westmoreland Station owned tracks leading onto the Wollogorang pastoral lease.

3.1 Previous Activities and Current Status

Prior to this area being granted as EL23573 a number of exploration companies had undertaken exploration in the same area. Exploration research, including historical report reviews, provides information of this historical disturbance which has been conducted across the licence area, particularly around the El Hussen and North East Westmoreland prospects. The work dates back to at least the mid 1950's where significant work, including drilling, costeaning, and bulldozing, was undertaken.

LCR undertook RC drilling at the North-East Westmoreland prospect between October and November 2006. The drilling is detailed in the table in Appendix 1.

LCR undertook diamond drilling at the North-East Westmoreland and El Hussen prospects between June and August 2007. The drilling is detailed in the table in Appendix 1. In addition, LCR undertook a helicopter-borne regional stream sediment sampling programme.

In 2008, a preliminary review of the exploration model was undertaken.

A further and more extensive review of the controls of the distribution and grade of uranium mineralisation was undertaken in 2009.

In early August 2010, LCR undertook a diamond drilling program. The 2010 drill hole locations are detailed in the table in Appendix 1. In addition, small-scale soil and stream sediment sampling was also undertaken.

In 2011, a Versatile Time Domain Electromagnetic (VTEM) airborne geophysical survey was commenced, however, after mobilising to site the survey had to be temporarily postponed until the following year due to unforeseen circumstances beyond LCR's control and onset of the wet season.

The VTEM survey recommenced and was completed in 2012. Due to availability, the survey was carried out between 15 and 26 October.

In 2013, parent company Laramide Resources completed a dual listing on the ASX, commencing trade on 30 April 2013. Whilst the protracted ASX listing period was undertaken, and due to market circumstances following the listing, on-ground exploration was inhibited and as such LCR was not able to get on to the ground.

LCR undertook an office-based geological targeting review in 2014.

A mineral systems review commenced with analysis of drill core and database interrogation in 2015. In addition, a VTEM anomaly was briefly visited in the field and rock chips taken around it.

No ground work has been undertaken in 2016 or 2017. VTEM results were further analysed by a contractor and plans made for site activities however these were delayed and not expected to be undertaken until late 2017.

The last two years has continued the mineral systems project with office-based emphasis on solid geology and structural interpretation.

3.2 Proposed Activities

During the course of the 2017-2018 exploration programme, it is anticipated that the following activities may be undertaken:

- Mapping reconnaissance, spectrometer surveying, and sampling;
- Track re-establishment and drill pad construction (to be confirmed);
- Diamond/RC drilling of warranted targets (to be confirmed);
- Core/chip sampling and chemical analysis (to be confirmed);
- Rehabilitation and monitoring.

The proposed schedule of exploration works to be undertaken during 2017-2018 is shown in **Table 3**. In view of the targets derived from the VTEM data, it is considered that initial work (i.e. mapping reconnaissance, spectrometer surveying, rock chip / soil / stream sediment sampling) will be very low impact. It is anticipated that drilling of a minimum of 2 drill holes will be undertaken of warranted targets determined from the above sampling. It should be noted that the specific areas studied will be under continuing review based on progressive exploration results. In addition, as the location of proposed drill pads has yet to be determined, it is likely a proposed drill plan addendum will be submitted to DPIR for approval prior to any significant disturbance being undertaken.

The timing of activities may change as a result of a number of factors including:

- The outcomes of work programme meetings;
- Discussions with the Traditional Owners;

- The availability and timing of equipment.

Table 3: Proposed 2017/18 Lagoon Creek Exploration Schedule

Activity	Duration of Activity	Amount
Stream sediment sampling	At various times	Estimated up to 50 samples as warranted
Soil sampling with spectrometer surveying	At various times	Estimated 200 – 1000 samples
Mapping, outcrop sampling	At various times	Estimated 20 – 100 samples
Diamond/RC drilling	1-2 weeks, timing and location yet to be determined. When known, a MMP addendum will be lodged prior to activities	Min. 2 drill holes

3.2.1 Mapping, Sampling, Anomaly Evaluation

LCR intends to undertake geological mapping/reconnaissance, which involves field identification of different rock types, their relationship to each other, outcrop characteristics and structural setting. Locations of mapped features and samples will be recorded by GPS. Access during mapping activities will be normally on foot, 4 wheel bikes, 4WD vehicle or a combination of all.

As well as mapping, sampling of various media will be then carried out by geologists and/or support staff. This is a relatively low impact activity and results in little or no effect on the environment. The types of material sampled may include rock, soil and various types of alluvium. With regard to stream sediment sampling, material will be sampled which passes through a 2-3mm aluminium sieve will be sampled; approximately 2 x 2kg identical samples will also be taken at each sampling location.

Handheld spectrometers and/or scintillometers will be used to measure the radioactivity of both the samples collected and the naturally occurring background radiation.

3.2.2 Earthmoving

To keep disturbance to a minimum, it is considered likely that proposed drill pads will be located over already existing tracks. Earthmoving equipment will be utilised for the construction / light blading of drill pads.

To allow drill rig access and operation, a small area surrounding each drill site will be cleared. Sticks and large rocks will be removed and where possible all mature trees will be avoided. On average drill pad clearing will be approximately 20m x 20m per hole to allow safe operation of the drill rigs and access for support equipment. However the size of the drill pad area will depend on the size of the rig and support vehicles being used and the nature of the topography.

In ground sumps may be required for the drilling activities, these are typically small pits installed with a front end loader. Specific details of sumps are provided in the drilling section to follow.

Re-establishment of access tracks and construction / light blading (using blade up methods) of drill sites will be conducted using a grader and/or front-end loader. The type of earthmoving equipment used will depend upon the type of access or works required. This methodology of access clearing has had little environmental effect on the country. The proposed track length is currently unknown until ground work has established suitable drill targets. When drill targets have been selected, a MMP addendum will be submitted to DPIR.

3.2.3 Drilling

A drill crew typically consists of three personnel per shift and a supervisor. The drill rig may be

accompanied by up to three other vehicles; one or two support trucks, which will carry fuel, water, spare equipment, drill rods, and a 4WD utility or light truck used as personnel transport. Drilling contractors to be used have not yet been finalised by LCR.

3.2.3.1 Diamond Drilling

Diamond-core drilling has been the most commonly utilised form of drilling at Westmoreland by LCR. Both truck mounted and helicopter-supported drill rigs have been used, the latter for sites which are inaccessible to conventional wheeled vehicles. Diamond-core drilling requires water, which will be sourced locally and pumped via poly-pipe when available, or brought to site via a water truck. Typically a single diamond drill hole will take 1-2 days to drill with two crews working alternate 12 hour day and night shifts.

As with most forms of drilling, a small area surrounding the drill hole is cleared to allow the rig to operate. Sticks and rocks will be removed, with all mature trees left where-ever possible. On average a clearing of 20m x 20m in area would be required to safely drill a core hole. The size of the area will vary with the size of the rig and support trucks being used and the nature of the country.

Diamond drilling requires the use of either an in-ground sump or above ground tanks to contain drilling fluids. Sumps are sealed with a biodegradable polymer to prevent fluid loss and soil contamination during the drilling process. In the event that a drill hole produces significant amounts of water, water may be discharged into bushland after settling to remove sediment. In all cases, water will not be allowed to report to natural drainage lines. Collected sediment is buried in the drill sump upon final rehabilitation. In the event that drilling also intersects significant uranium mineralisation, the discharge of water will be assessed on a risk basis and contained in a sump as required.

3.2.3.2 Reverse Circulation Drilling

RC (Reverse Circulation) is a track or truck mounted deep air drilling method with the larger rigs capable of several hundred metres in optimum conditions. This drilling uses a hammer bit which breaks up the rock to continue drilling, with samples returning to surface within an inner tube, inside of the rods.

RC drilling can be used to quickly, economically and progressively confirm stratigraphic interpretations based on geological mapping and geophysical surveys conducted, other geophysical data and progressive drilling results.

All RC drill rigs working on site will be fitted with dust suppression. Dust suppression can be achieved in several ways but typically involves directing all sample return into a cyclone splitter,

which then funnels material into a drum which can then be manually opened and the material collected in a plastic/calico bag or bucket. A rotating cone within the splitter allows small (1-2kg) samples to be separated from the bulk of the sample (30kg per drilled metre) to be sent for geochemical testing if required.

Radiation monitoring using a scintillometer will be used to determine the level of radioactivity (if any) during drilling operations. Cuttings from RC drilling will be collected and geologically logged at the drill site. Representative cuttings (<100g) of each metre drilled will be put into plastic chip trays and subsequently stored as a permanent record. Selected intervals will be submitted for geochemical analysis as necessary.

Given the considerable variety in the size of air drilling rigs, there is commensurate variation in the area required to be cleared for each hole. In all cases mature trees will be left where-ever possible and any land clearing minimised.

In general air drilling methods do not require large amounts of water, with small amounts (<500 litres per day) required for dust suppression. In the event that a drill hole produces significant quantities of water, the water will be passed through a sediment trap and then allowed to disperse to bushland. In all cases water will not be allowed to report to natural drainage lines. In the event that drilling also intersects significant uranium mineralisation, the discharge of water will be assessed on a risk basis and contained in a sump as required.

3.2.4 Downhole Geophysical Logging

Completed drill holes may be probed with a geophysical instrument to take gamma concentration measurements. This involves lowering of a probe at the end of a winch cable down the holes and recording data digitally.

3.2.5 Sample Analysis and Treatment

Core-processing, involving geological logging and cutting and bagging of samples for analysis, is conducted at Camp Caroline. Most of the drill core is stored at the campsite on pallets.

3.2.6 Campsite Maintenance

The campsite is open for part of the year, as required. Disturbance generally includes vegetation clearing of a fire-break around the camp and slashing within the camp perimeter.

2.2.7 Targeted Minerals

The primary target minerals of the exploration programme are uranium and gold. Chemical analysis for other elements that could influence the metallurgical response of the ore, or be of

secondary economic importance, is also conducted.

4 CURRENT PROJECT SITE CONDITIONS

4.1 Land Area Type

The tenement is part of the Gulf Falls and Uplands bioregion comprising scattered low, steep hills on Proterozoic and Palaeozoic rocks. The soils are skeletal or shallow sands. Other areas can comprise strike ridges and intervening valleys, with the shallow cover being siliceous sands. The vegetation over the region predominantly comprises open and general woodland, with a small amount of open forest. From on-ground work, areas are generally dominated by spinifex and scattered eucalypt.

4.2 Geology

The Westmoreland region lies on the Palaeoproterozoic Murphy Tectonic Ridge that separates the Palaeoproterozoic Mt Isa Inlier from the Mesoproterozoic McArthur Basin and the flanking Neoproterozoic South Nicholson Basin. Early Proterozoic sediments, volcanics and intrusives of the Murphy Metamorphics are the oldest rocks exposed in the area and are overlain by two Proterozoic cover sequences. The oldest cover lying unconformably on the Inlier is the Cliffdale Volcanics comprising over 4000m of volcanics of probable sub-aerial origin, over half of which is ignimbrite and the rest of which is rhyolite. They are comagmatic with the Nicholson Granite and together comprise the Nicholson Suite. The Tawallah Group unconformably overlies the Nicholson Suite and is the oldest part of the southern McArthur Basin. The base contains conglomerates and sandstones of the Westmoreland Conglomerate that thin towards the southeast and are overlain by andesites, basalts agglomerates, tuffs and sandstones of the Seigal Volcanics. Together the Westmoreland Conglomerate and Seigal Volcanics make up two thirds of the total thickness of the Tawallah Group. Although not represented here the volcanics are in turn overlain by the McDermott Formation, the Sly Creek Sandstone, the Aquarium Formation and the Settlement Creek Volcanics.

4.3 Hydrology

Ephemeral gullies drain the prospect areas and flow into Branch and Lagoon Creeks. Most drainages, both major and minor, dry out completely throughout the dry season.

LCR's proposed exploration activities will have little impact on the water resources of the area.

4.4 Flora & Fauna

An updated flora and fauna report has been undertaken by Charles Darwin University and is attached as **Appendix 3**.

The report advises of the following introduced plants, which have been identified as problem weeds in

one or more locations in northern Australia, however, no weeds of national significance:

Awnless Barnyard Grass; Bitter Broom; Flannel Weed; Hyptis; Khaki Weed; Noogoora Burr; Nutgrass; Spiked Malvastrum; Prickly Malvastrum; Spiny-head Sida; Starburr; Townsville Lucerne; Paddy's Lucerne; Ulcardo Melon; Indian Bluegrass; Mossman River Grass; Coffee Bush; Siratro; Pink Wood Sorrel; Coffee Senna; Cinderella Weed

There are no potential weeds of National Significance in the project area may include:

The following animals have been identified as pests, not of national significance:

Cane Toad; Red-tailed Black-Cockatoo; Sulphur-Crested Cockatoo; Agile Wallaby; Dingo / Wild dog; Cat; Donkey; Horse; Pig; and Cattle.

The following flora has been listed as a threatened species:

Fern (endangered).

Furthermore, the following fauna has been listed as threatened species:

Gulf Snapping Turtle (national status: endangered); Mertens' Water Monitor (vulnerable); Mitchell's Water Monitor (vulnerable); Yellow-spotted Monitor (vulnerable); Red Goshawk (national status: vulnerable); Greater Sand Plover (national status: (vulnerable); Carpentarian Grasswren (national status: endangered), Gouldian Finch (national status: endangered); Common Brushtail Possum (southern) (endangered); Ghost Bat (national status: vulnerable); Northern Leaf-nosed Bat (vulnerable); Carpentarian Rock-rat (national status: endangered).

LCR does not permit its employees or contractors to bring feral animals to the site. LCR has no specific plans to control feral animals, however, assistance may be provided to Traditional Owners if requested.

As disturbance will be minimal, it is considered unlikely any of the above will be affected in the proposed work areas.

Habitat modification and loss as a result of altered burning regimes and weed invasion are key threatening processes for many species. LCR has specific procedures in place both to ensure weeds are not spread as a result of our activities and to ensure that wildfires are not started. In addition, any new weeds that are identified will be reported to the DPIR and DENR, as per the Weed Management on Mine Sites Advisory Note, which is found on the DPIR website.

4.5 Current Land Use

EL23573 is mainly situated on a pastoral lease – “Wollogorang Station”.

4.6 Historical, Aboriginal, Heritage Sites

An inspection of the register for recorded and registered sacred sites was undertaken through Aboriginal Areas Protection Authority. There has been a registered sacred site identified within the boundaries of the exploration license. Please refer to **Appendix 4**.

5 ENVIRONMENTAL MANAGEMENT SYSTEM

5.1 Environmental Policy and Responsibilities

LCR considers environmental management as core business to its operations. LCR business is focused on uranium exploration either side of the Northern Territory / Queensland border and management policies are therefore focused specifically on these activities. LCR's Environmental Management is based on a risk management approach combined with a strong focus on indigenous community consultation and involvement with implementing operational plans and procedures to protect the environment.

LCR's Environmental, Safety and Social policies are built on the following principles:

- Leadership – commitment and active involvement from management;
- Experience – experienced personnel are required in the field to supervise and mentor staff and contractors;
- Vigilance – constant awareness of potential risks and prompt attention to mitigate risks;
- Accountability – clear responsibilities and accountabilities are defined for all personnel. Accountability to indigenous landowners is emphasised by openness and direct involvement;
- Training – all field personnel must be provided with appropriate guidance and training to undertake their duties safely and professionally;
- Well defined work procedures – incorporate risk management controls for environment, health and safety, technical and social risks into work procedures in an integrated manner;
- Resources – appropriate resources and equipment will be supplied to operate professionally.

Environmental management plans are developed from hazard identification processes and in consultation with local stakeholders. Control measures are incorporated into planning of each field programme based on the Risk Control Hierarchy of:

- Elimination of hazard;
- Substitution of hazardous processes or materials;
- Engineering controls;
- Procedural controls;
- PPE.

Finally the control measures are implemented by inclusion into operational procedures for each field activity which form the basis for staff and contractor induction, training and supervision. Traditional Owners are engaged as Cultural and Environmental Monitors (CEMs) to monitor the day to day implementation of control measures as an independent community based accountability and audit process.

Contractors will be required to comply with all LCR's management policies and operating procedures.

5.1.1 Environmental Policy

LCR's commitment to the environment is defined in its Environmental Policy.

Operationally, LCR's objectives will be achieved by:

- Open and accountable communication with regulators and local communities;
- Compliance with environmental laws, regulations and conditions as a minimum standard;
- Consultation with Traditional Owners to ensure control measures meet local community and cultural standards;
- Incorporating risk assessment and hazard Identification into operational and business planning;
- Incorporating risk control hierarchy principles into control measures;
- Ensuring experienced personnel are involved with all aspects of operations and that all personnel have appropriate training and guidance;
- Minimising waste;
- Undertaking progressive rehabilitation of exploration disturbance to best practice industry and community standards.

5.2 Statutory and Non-Statutory Requirements

5.2.1 Statutory Requirements

The following list all relevant legislation, codes and other statutory obligations related to the tenement detailed in section 1.2.

5.2.1.1 Northern Territory

Current Northern Territory legalisation which may be applicable includes:

- *Aboriginal Land Act 2013;*
- *Bushfires Act 2013 and Regulations 2013;*
- *Dangerous Goods Act 2012 and Regulations 2012;*

- *Environmental Offences and Penalties Act 2011;*
- *Heritage Act 2014 and Regulations 2012;*
- *Mineral Titles Act 2014 and Regulations 2011;*
- *Mining Management Act 2013 and Regulations 2013;*
- *Northern Territory Aboriginal Sacred Sites Act 2013 and Regulations 2013;*
- *Pastoral Land Act 2014 and Regulations 2013*
- *Plant Health Act 2008 and Regulations 2012*
- *Radiation Protection Act 2012 and Regulations 2012*
- *Radioactive Ores and Concentrates (Packaging and Transport) Act 2011 and Regulations 2010;*
- *Territory Parks and Wildlife Conservation Act 2013; by-Laws 2014; and Regulations 2010;*
- *Waste Management and Pollution Control Act 2013;*
- *Water Act 2013;*
- *Weeds Management Act 2013; and Regulations 2013; and*
- *Work Health and Safety (National Uniform Legislation) Act 2011; and Regulations 2011*

5.2.1.2 Commonwealth

Commonwealth legislation which may be applicable includes:

- *Aboriginal Land Rights (NT) Act 1976;*
- *Native Title Act 1993;*
- *Atomic Energy Act 1953;*
- *Environment Protection and Biodiversity Conservation Act 1999.*

5.2.1.3 Other

Other statutory requirements, Codes, Guides and so on relevant to EL23573 include the following:

- *Code of Practice for Safe Transport of Radioactive Materials 2008, ARPANSA;*
- *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing 2005, ARPANSA;*
- *Safety Guide for the Safe Transport of Radioactive Material, 2008, ARPANSA;*

- *Safety Guide for the Management of Naturally Occurring Radioactive Material (NORM), 2008, ARPANSA;*
- *Reporting of employment/injury and safety statistics to NT WorkSafe;*
- *Reporting of environmental incidents to DPIR.*

LCR keeps abreast of the latest statutory requirements from a combination of regular referral and checking of the Northern Territory Government website and advice from tenement consultants Australian Mining and Exploration Titles Services (AMETS).

5.2.2 Non-Statutory Requirements

Lagoon Creek Resources has a Joint Venture over the tenement with Central Australian Phosphate Limited (CAP). CAP was taken over by Verdant Minerals Ltd (previously known as Rum Jungle Resources Ltd) in early 2014. Each Joint Venture partner holds a 50% interest and Lagoon Creek is the operator.

When exploring in the tenement region LCR also interacts with the local indigenous groups. The tenement was granted through the Native Title expedited process and LCR has received an AAPA certificate covering the tenement which gives details on sacred sites and any additional exploration conditions. When LCR operate in the area local Traditional Owners are generally employed who can advise with cross cultural training, protection of sacred sites and environmental protection.

LCR will abide by the terms of agreement for access with the pastoral lease holder.

5.3 Induction and Training

Prior to undertaking any field activities all staff and contractors are required to undertake field inductions, which includes environmental, cultural and safety issues. A general induction includes all aspects of the Environmental Management Plan (EMP – refer to Section 5.4). More detailed induction and training is provided for the following environmental aspects:

- Environmental issues and protection;
- Safety and environmental incident reporting;
- Radiation management;
- Weed management;
- Cultural awareness.

In addition to the inductions, during busy periods daily briefings are held to discuss specific issues pertaining to the days operations. During these periods, weekly ES&H meetings will also be carried out

where environmental aspects of the operation will be discussed. All induction records and ES&H meetings will be maintained in electronic and hard copy format.

5.4 Identification of Environmental Aspects and Impacts

The key environmental aspects considered to be important in the assessment of environmental impacts for the Lagoon Creek Project, are outlined in Table 4 - Environmental Aspects and Impacts. Due to the nature of exploration activities, a qualitative risk assessment has been undertaken on the various aspects of work to be undertaken. Risk assessments will be reviewed regularly in consultation with local stakeholders once fieldwork commences.

Table 4: Environmental Aspects and Impacts

Aspect	Rating	Impact	Management Measure	Rehabilitation
Access Tracks	M	Erosion risks, particularly on sloping terrain, sediment runoff from roads into creeks	- Minimise tracks. -Ensure tracks properly formed. Utilise proper track alignment and gradient in sloping areas. -Blade up grading. -Erosion controls including diversion drains and “whoa boys”	-Closure of roads at end of dry season that are to be used the following year. -Erosion controls established to minimise erosion over wet season. -Permanent rehabilitation of newly constructed roads when no further use required.
	L	Dust generation	-Blade up track clearing -Speed limits <50km/hr	-Closure of roads and rehabilitation.
	M	Damage to habitat, Roadkill	-Divert tracks around trees and dense stands of vegetation. -Supervision by Traditional Owners (CEMs). -Limit speed <50kph.	-Closure of roads and rehabilitation.
	M	Damage to Cultural sites	-Supervision by CEMs and planning of tracks with Traditional owners input. -Reference to cultural heritage maps.	-Avoid cultural sites. -Consultation with Traditional Owners.
	H	Weed Invasion	-See Weed management Plan.	-Ongoing monitoring of treated areas and follow up spraying

			-Mapping of weed areas along tracks for seasonal treatment.	
	H	Safety on Tracks	-Limit speed <50km.	-Close off roads when programmes are finished
Fire Management	H	-Uncontrolled "hot" fires. -Damage to property, camps and equipment. -Damage to cultural sites or food sources.	-Conduct controlled burns around camp sites and drilling areas as firebreaks. -Burning to be undertaken with approval and/or supervision of Bushfires Council and Traditional owners.	-Use emergency back burning if feasible contact and liaise with Bushfire council. -Notify local communities. -Monitor fire.
Drill Pads and Sumps	M	-Erosion risks. -Damage to habitat. -Risks to fauna (drill sumps). -Overflow of sludge into watercourses.	-Construct sumps properly with sufficient volume. -Bund down slope side of sumps. -Construct sumps with sloping entrance to allow fauna to escape. -In problematic areas use above ground tanks with banded plastic underlay. -Remove sludge off-site to a safe disposal site.	-All sumps to be rehabilitated prior to wet season.
Drilling	M	Fuel and fluid spills	-Fuel lines, valves checked daily. -Containment or plastic sheeting to be placed under fill points.	-Absorbent matting and "kitty litter" kept with rig at all times. - All spills cleaned up.
	M	-Drill return water and sludge overflows.	-Contain flows with bunding. -Ensure sumps constructed properly. -Cease drilling if fluid escapes containment areas until control measures are in place.	-Leaks and spills to be dealt with immediately and remediated.

	H	-Uncapped drill holes risk to small fauna	-Backfill and Cap holes on completion and concrete collar.	-Backfill and Cap holes on completion and concrete collar.
	M	-Contamination of groundwater.	-Use biodegradable drilling fluids. -Avoid hydrocarbon spills.	-Backfill and if necessary grout drillholes on completion.
	M-H	-Water supply -Pumping water from sensitive sites. -Pumping water holes dry.	-Source water from substantial or flowing water courses in consultation with Traditional owners. -Monitoring by CEMs.	
	M-H	-Exposure of drill sludge to rainfall run-off and fauna. -Radionuclide runoff and radiation safety.	-For in ground sumps, allow drilling water to evaporate then in fill sump with 1m of compacted soil. -For above ground tanks, remove sludge in suitable container to appropriate burial pit and cover with 1m of compacted soil.	-Check progress of rehabilitated sites. -Radiation monitoring checks of backfilled sumps and burial pits.
	M	-Rubbish left on site.	-Ensure all rubbish is removed from site at the completion of each drill hole.	-Remove any rubbish found on project area.
	H	-Potential fire/bushfire risk due to general drilling machinery operation and maintenance, in particular hot work	-Ensure drill site is clear of vegetation which could contact with drilling machinery -As necessary, conduct controlled burns around drilling areas as firebreaks (burning to be undertaken with approval and/or supervision of Bushfires Council and Traditional owners) -Ensure all hot work is conducted in an appropriately controlled manner using shielding etc -Ensure safe storage and handling of fuels and other flammable	-Use emergency back burning if feasible, contact and liaise with Bushfire council. -Notify local communities. -Monitor fire.

			<p>materials. Conduct regular rig maintenance to check for leaking fuel lines and other potential fire risk areas</p> <p>-Provide all necessary fire fighting equipment e.g. extinguishers of appropriate type</p> <p>-Provide necessary information to drill operators stressing the importance of fire prevention and control</p>	
	L	-Artesian flows from exploration drill holes	-In the unlikely event that artesian flows are encountered, the holes will be plugged and capped in accordance with statutory requirements and DPIR Advisory Note AA7-008	-Refer management to measure note
Vehicle Access	H	-Spread of weeds	-See Weed Management Plan Section of MMP	-Weed Spraying in consultation with local community and DPIR, if required
	H	-Injury to people and fauna	-Limit speed to 50km/hr. -Induction.	-Rehabilitate and close roads after use is completed.
	M	-Erosion from tracks.	-Proper road alignment and drainage	-Rehabilitate and close roads after use is completed.
	L	-Dust	-Limit Speed. -Blade up grading.	-Rehabilitate and close roads after use is completed.
Mapping	M	-Interference with significant or restricted access sites.	-Avoid sites by reference to updated Cultural Heritage Maps and liaison with Traditional Owners.	-Ongoing consultation with Traditional Owners
	H	-Spread of weeds	-See Weed management Plan	-Weed Spraying in consultation with local community and DPIR
	L	-Rubbish	-Bring all rubbish back to camp	-Remove any rubbish found on site.

	M	-Uncontrolled fires	-No fires to be lit outside of controlled burns.	-Inform local community of uncontrolled or accidental fires
Camp Management				
Fuel Storage	M-H	-Fuel Spills	-Fuel store within bunded areas. -Fill points and valves to be checked and kept in good order. -Absorbent matting kept on hand. -Reporting and remediation of spills.	-Fuel spills to be remediated.
Septic Systems	M	-Overflow of septic waste tanks	-Septic systems to be checked regularly.	-Check for leaks and remediate as required.
Rubbish	M	-Littering	-Maintain rubbish pits and cover rubbish properly.	-Dispose of all litter.
Fire breaks	M	-Uncontrolled fires	-Fire breaks and back burning to be established around camp early in dry season.	-Use back burning where possible to limit fire. -Contact and liaise with NT Bushfire Council. -Notify local community.
Core and Sample Storage.	M-H	-Radiation safety	-Regular radiation monitoring. -Appropriate storage of samples.	-Remove spilled samples ore core to appropriate storage facility or bury in pits with at least 1m of compacted soil above.

Where contracting organisations have an EMP, this will be evaluated and audited prior to, or immediately following, mobilisation to the field. Where a contractor does not have an EMP, or the system is deemed deficient, contractors will be required to comply with LCR systems.

5.4.1 Water Management

The objective of water management is to ensure that exploration activities do not cause contamination of ground and surface water.

It is anticipated that groundwater may be extracted from a water bore near Camp Caroline for the proposed drilling.

Minor spillages of hydrocarbons may impact on groundwater and surface water. Measures are in place to ensure that the potential for spillage of hydrocarbons and other hazardous materials is minimised and any spillage is cleaned up and the area rehabilitated. A hydrocarbon and chemical spill protocol has been prepared to guide any necessary clean-up operations. In

addition, dust emissions from vehicles may impact upon surface water.

Due to the minimal clearing required to construct drill pads on existing tracks, it is considered any impacts to surface water courses on the project area would be negligible. Impact to surface water courses can, however, result from vegetation clearing and drilling activities, including:

- impacts to the shape, location and profiles of water courses from clearing;
- increased sediment load resulting in alteration of depositional pattern of the watercourses;
- pollution potential from erosion from disturbed areas, and spillages from exploration activities; and,
- dust emissions from drill rigs and vehicles.

Surface water management includes minimising any impacts on natural surface drainage patterns and, including:

- rehabilitation of access tracks crossing drainage lines after significant/erosive flood flow;
- best practice drill rig pad management, including topsoil and vegetation management, and construction of small bunds to divert surface runoff around disturbed areas and access tracks;
- ensure spillages are cleaned up and rehabilitated;
- reducing dust emissions (see section 4.4.1).

Containment of drilling water returns within drill sumps and/or tanks and rehabilitation of the drill sites prior to the onset of the wet season.

5.4.2 Weed Management Plan

LCR understands that the spread of weeds is of particular concern to the NLC, Traditional Owners and local land care groups. LCR understands that weed outbreaks can occur due to the activities of explorers. Protection of the area from weed invasion will focus on the prevention of spreading weed seeds, and the control of weeds that may be accidentally introduced. Procedures include:

- Training of all LCR personnel in weed identification and control procedures, including colour copies of principal problem weeds will also be in circulation to assist weed recognition in the field;
- Designated wash-down areas for all vehicles and equipment. LCR personnel ensure vehicles and equipment are washed down and documented prior to departing Camp Caroline;

- The designated wash-down area at Camp Caroline feeds into an adjacent sump. This site is monitored for any emergent weeds;
- A Vehicle Clearance Form is filled out when vehicles are washed down, prior to departing site. Completed forms are filed at Camp Caroline;

LCR has undertaken in-house flora studies over the Westmoreland project area in Queensland, and no weeds listed in the Land Protection Act 2002, or as Weeds of National Significance were observed. The weed control measures will be reviewed and updated on an ongoing basis. Should any weeds be identified as new to the area, prompt contact to the Weeds Management Branch of the Department of Environment and Natural Resources (DENR) will be made.

5.4.3 Flora & Fauna Management

Effective management of flora and fauna aims to minimise disturbance, avoid known priority flora locations and to ensure effective progressive rehabilitation. Management practices to be employed are:

- Use old and existing tracks where possible;
- Minimise the number of new tracks constructed;
- Avoid clearing established trees and dense stands of vegetation;
- Rehabilitate disturbed areas as soon as practicable;
- Ensure all staff are inducted in relation to fire management.

The objective of fauna management is to minimise disturbance to fauna through exploration activities. Potential impact of exploration activities on native fauna is the displacement or loss of species or habitat during vegetation clearing operations. Other potential impacts could be:

- Hydrological changes and changes to surface water quality;
- Disturbance at important areas (i.e. waterholes) by personnel;
- Road kill;
- Fire.

Key actions for fauna management include:

- Minimising disturbance to vegetation and potential fauna habitats;
- Prohibiting firearms and domestic pets on site;
- Educating people on the importance of not disturbing wildlife;
- Limiting vehicle speeds to reduce the potential for road kills;
- Managing refuse to prevent attraction of feral animals;
- Training in fire prevention and management (see Section 5.5);

- Feral animal control programmes may be implemented if required; this will be done in consultation with relevant agencies.

Should an endangered/threatened species be identified within the project area, LCR would act on the advice of the DENR. Action taken may include increasing staff awareness by way of update of personnel inductions, demarcation of the known area and update of local maps to mitigate any significant impact to the species.

5.4.4 Waste Management

Waste is produced by many exploration activities. The exploration programme will generate a number of different types of wastes, and may include the following:

- Organic debris (i.e. food scraps);
- General refuse (i.e. scrap metal, cardboard and plastics);
- Hydrocarbon wastes (i.e. oil filters);
- Sewerage.
- Small quantities of Naturally Occurring Radioactive Material (NORM) from drilling;

All waste generated from the exploration activities will be returned to Camp Caroline. Any 'industrial waste' (i.e. tyres, oils, steel and hydrocarbon contaminated material) is generally transported to Mt Isa for disposal. Most waste that can be recycled is transported to Mt Isa or recycled at relevant licensed premises. In addition, all domestic refuse is disposed of in a pit at Camp Caroline and burned on a regular basis and covered with dirt. Any waste generated from projects operated by LCR in Queensland will be disposed of in Queensland.

Camp Caroline has a septic system for collection of black-waters. Septic tanks are emptied by a specialist contractor as required.

5.4.5 Noise & Air Quality Management

Noise generated from exploration activities may impact on fauna and people in the vicinity of the project. Impact on the local community is expected to be minimal due to the remoteness of proposed exploration operations.

Dust control and management is to ensure that dust generated from exploration activities does not cause contamination of water and soil.

Management measures to ensure environmental dust emissions are minimised include:

- Equipment/water to suppress dust from drill rigs;
- Limiting vehicle speeds whilst driving on site;

- Minimising vegetation clearing/disturbance.

All machines are fuelled with diesel which burns to produce water, carbon dioxide, carbon, and in most cases, some sulphur-based emissions. These are not likely to cause significant problems in the remote open air environment of the Permit.

5.4.6 Cultural & Heritage Management

Cultural and heritage management measures aims to minimise the impacts to cultural and heritage sites. This is achieved through effective education of personnel working on the project and liaison with the Traditional Owners.

Aboriginal heritage and cultural site management is covered in the field inductions for all personnel.

Cultural awareness training courses can be provided to employees and contractors.

5.4.7 Hazardous Material & Hydrocarbons Management (not Radiation)

Diesel is used for most exploration activities – this is stored in 2 self-bunded tanks of 27,000 litre capacity at Camp Caroline. Unleaded petrol (up to 1500 litres) and Jet A-1 (up to 5000 litres) may also be stored in smaller amounts at Camp Caroline, depending on demand, which is stored in 205 litre drums. LCR ensures the following is undertaken:

- Transportation and storage of hydrocarbons in accordance with applicable regulations and codes;
- Use suitable methods for refuelling operations to prevent spillage;
- Use of plastic sheeting under small stationary motors to catch any spillage;
- Disposal of any hazardous/hydrocarbon waste in a manner that minimises any potential impacts, and disposal to a registered disposal site where required;
- Cleaning up of any spills and remediation of contaminated areas;
- Have emergency spill kits on hand;
- Hydrocarbon management protocol.

5.4.8 Radiation Management

The objective of radiation management is to ensure that all activities conform to the “As Low As Reasonably Achievable” (ALARA) principle.

Much of the material encountered during uranium exploration activities is not mineralised and does not contain radioactive materials in quantities significant enough to present a risk to workers or the environment. When mineralised zones are discovered, the main radioactive

materials encountered may include naturally occurring uranium, thorium, radon and its decay products.

To ensure all radiation risks are effectively managed, LCR has a Radiation Management Plan (please refer to **Appendix 6**).

The Radiation Management Plan (RMP) includes requirements for:

- Monitoring;
- Dose assessment;
- Transport requirements;
- Sample handling;
- Storage;
- Waste management and controls;
- Worker inductions and training;
- Personal hygiene control;
- Recordkeeping and reporting.

A Radiation Induction is mandatory for all relevant LCR personnel and contractors.

5.4.8.1 Radiation Sources

The principal sources of ionising radiation during exploration include:

- Inhalation of dust containing uranium mineralisation (the effective dose equivalent being largely due to the presence of long-lived alpha-emitting radionuclides in the uranium decay series);
- Direct exposure to gamma radiation;
- Inhalation of the decay products of radon gas;
- Ingestion (principally associated with contamination).

Of these sources, the inhalation of dust is likely to be the greatest source of effective dose equivalent (i.e. 'dose'). Gamma 'shine' from cores and drill chips grading 0.1 % U_3O_8 is a minor secondary contributor to dose. Radon decay products (variously called 'radon daughters' or 'radon progeny') will contribute insignificantly to dose, since in unconfined atmospheres, they dilute and disperse rapidly. Ingestion of uranium-bearing mineralised contamination is a trivial source of dose, not only because ingestion is unlikely but also because uranium in its native form is almost wholly insoluble in the body and will pass through the gut without transferring to internal organs. Experience at other exploration sites over many years would indicate that individual doses to

exploration personnel are unlikely to exceed one or two milli-sieverts per year (1-2 mSv/y).

Based on the proposed work, the following exploration activities which could expose individuals and the environment to ionising radiation include:

- Drilling;
- Core handling and transport;
- Core cutting and examination;
- Sample handling and transport;
- Rehabilitation of drill pads and sumps;
- Disposal of drilling cuttings and sludge;
- Core storage;
- Environmental and occupational monitoring.
- Traversing mineralised outcrops;

Table 5 shows major risks associated with uranium exploration and mitigation matrix for these activities.

5.4.8.2 Storage

The storage of radioactive material in the Northern Territory is governed by Radiation Protection Act 2009, however, mining and related activities are exempt from this Act. LCR stores the majority of its drill core in a core storage area at Camp Caroline. Radioactive drill core from Queensland has been stored at Camp Caroline since the end of 2007. Any samples collected during the exploration activities which require storage will be kept within the designated storage area.

In the long term, if one of LCR's projects develops to a mining stage, the Camp together with the Queensland core/material would be moved to that location. In this case, the Queensland core would be stored within a new designated core storage area for reference, sent to the mill for production, or disposed of. In the event of disposal LCR would seek approval permits in an approved manner.

5.4.8.3 Transport

Mineralised samples sent off-site for testing will be packed and transported in accordance with Northern Territory and Commonwealth Legislation. Samples sent to external laboratories will be accompanied with 'chain-of-custody' records, and will be returned to the site for disposal or storage after they are no longer required for

laboratory analysis. All radioactive material will be transported in accordance with ARPANSA's Code of Practise for Safe Transport of Radioactive Material, 2008.

Table 5: Radiation Risk and Mitigation Matrix

Activity	Principal Dose Pathway	Mitigation Measures	Monitoring
Drilling	- Inhalation of LLAD - Direct gamma	- Dust collection device - Respiratory protection (dust mask)	- Personal dust sampling - Alpha-counting - TLD
Traversing mineralised outcrops	- Direct gamma	- Time management	- TLD
Core/sample handling, cutting, examination and transport	- Direct gamma - Ingestion of dust	- Time management - Wash hands	- TLD
Sample storage	- Direct gamma - Inhalation of RDP	- Time management - Ventilation	- TLD - Personal air/dust sampling
Disposal of drilling cuttings and sludge	- Inhalation of LLAD - Direct gamma	- Dust suppression (water spray) - Time management - Burial	- TLD - Personal air/dust sampling
Rehabilitation	- Inhalation of LLAD - Direct gamma	- Dust suppression (water spray) - Time management	- TLD - Personal air/dust sampling
Monitoring	- Direct gamma - Inhalation of LLAD	- Time management - Ventilation	- TLD; Instant Read Dosimeters - Personal air/dust sampling

* *Long-Lived Alpha-emitters in Dust (LLAD)*

* *Radon Decay Products (RDP)*

* *Thermo-Luminescent Dosimeter (TLD)*

* *Time management: simply means not spending time near the activity if not actually working. Thus breaks should be taken away from the activity area*

5.4.8.4 Contamination

Mobile equipment used in the proposed exploration programme may become contaminated with uranium-bearing material. A radiation clearance will be conducted prior to any vehicles and mobile equipment leaving Camp Caroline. All subject items

will be analysed for contamination using alpha and gamma radiation detectors, and any contaminated items will be cleaned and re-tested until they pass inspection. A record of all equipment inspected will be maintained.

Areas where drill-rigs and sumps are established will first be surveyed using gamma dose-rate meters. Following rehabilitation, these areas will again be surveyed to detect any change in gamma dose-rate. These measurements will be used to monitor rehabilitation measures.

5.4.8.5 Wastes

All wastes generated by the drilling programme will be classified into categories which reflect the likelihood of contamination.

Radioactive wastes may consist of soil, core samples, RC rock-chip or diamond core drill cuttings, and core sample saw cuttings. LCR proposes the following management of these wastes:

- Diamond drilling sludge, RC rock-chip, core saw cuttings and other collected materials will be disposed and buried beneath no less than 1m of soil;
- Unwanted core samples will be disposed of onsite and buried beneath no less than 1m of soil;
- Following disposal, monitoring will be undertaken to ensure the area does not exceed measured baseline levels;
- The location of all disposal sites will be recorded and inspected to ensure rehabilitation success.

5.4.8.6 Accidents and Incidents

Radiological accidents and incidents that deliver a significant dose to an individual are unlikely at an exploration site, however, there may be a perception of risk. A radiation induction strives to alleviate this perceived risk.

All accidents and incidents will be recorded and an explanation given to any personnel involved. If possible, an assessment will be made of the likely magnitude of any effective dose equivalent delivered.

All incidents will be reported to DPIR (Form CF7-001) and other relevant Authority.

5.4.8.7 Record Keeping and Reporting

LCR will maintain records of all personnel working on or visiting the exploration site, and

will retain an ionising radiation history of employees and contractors who have worked on LCR projects. Records will be maintained of all attendees at induction or training courses.

A three month and annual accumulated dose report is provided by ARPANSA of radiological dose rates collected from the Thermo-Luminescent Dosimeter (TLD) badges worn by on site personnel. These assessments are undertaken by qualified and experienced health physicists at ARPANSA. Information from these assessments is available to all employees and contractors.

5.4.8.8 Training

All employees and contractors working on LCR sites will receive a general radiation induction.

Radiation Safety Officer (RSO) training has been provided to some of the LCR staff. In-house training will be provided to staff that will aid the duties of the RSO.

5.5 Environmental Audits, Inspections and Monitoring

LCR undertakes internal auditing to ensure compliance with management system requirements and to facilitate continuous improvement. Generally the site manager will carry out inspections at least twice a year during an active field season to identify environmental concerns and ensure remedial actions are taken. As part of its field operations, LCR will engage Cultural and Environment Monitors as a continuous community auditing and accountability process.

Further audits/inspections may be conducted from time to time by external consultants including:

- Traditional Owners;
- Regulatory authorities and key stakeholders;
- ES&H Consultants.

To date, no significant findings have been identified. The audit findings have included items such as requirements for additional spill kits; ensuring bunded areas with plastic sheeting are utilised for fuel drum storage and portable generators/pumps; protocols such as vehicle clearance prior to leaving site work efficiently and appropriately documented; progressive rehabilitation is successful. Due to a lack of fieldwork, recent audits have a more forward-looking focus for when fieldwork resumes.

5.6 Environmental Performance

5.6.1 Objectives and Targets

LCR's objectives for the upcoming field season are as follows:

- Continue good communications with regulators and local communities;
- Minimise impact to the environment and heritage in accordance with community and regulatory standards;
- Compliance with environmental laws, regulations and conditions as a minimum standard;
- Consultation with Traditional Owners to ensure control measures meet local community and cultural standards;
- Incorporating risk assessment and hazard Identification into operational and business planning;
- Ensuring experienced personnel are involved with all aspects of operations and that all personnel have appropriate training and guidance;
- Minimise waste;
- Undertaking progressive rehabilitation of exploration disturbance to best practice industry and community standards.

5.6.2 Performance Reporting

LCR has not undertaken any ground-based exploration in the last reporting period.

Work and camp sites will be inspected routinely and their condition recorded and documented.

Given the minimal work required to establish drill pads on existing tracks and/or pre-existing cleared ground, minimal disturbance is anticipated.

Traditional Owners will be invited to accompany LCR teams during exploration activities.

LCR undertakes monitoring to ensure management strategies and systems in place are effective. Examples of monitoring undertaken includes drill pad rehabilitation and vehicles departing Camp Caroline.

LCR has developed, documented and implemented procedures/protocols which detail requirements for minimising exploration disturbance and rehabilitation requirements. Rehabilitation is undertaken on a progressive basis whenever possible with all necessary rehabilitation actions completed prior to the end of each field season. As a result of these protocols and systems in place, all disturbance is, and will be, documented with photographs and location prior to disturbance and following rehabilitation works. Follow up inspection and photography is, and will be, conducted as soon as practicable at the start of the subsequent field season. Rehabilitation works being undertaken are regularly monitored during the field season by senior site management to ensure the programme is being effectively implemented.

Rehabilitation progress is included in the internal environmental audits conducted during the field season.

As outlined in the site inductions, all personnel wishing to depart Camp Caroline (e.g. leaving for Mt Isa) by vehicle must ensure they have a written clearance form. As part of this monitoring process, the vehicle is washed down at the Camp's wash-down bay, and once dried, LCR monitors the vehicle for radiation and any seeds/weeds. If the vehicle passes the monitoring, the driver is provided with a written clearance form to be kept in the vehicle for the duration of the journey. This monitoring has proven to be very effective and all personnel are fully aware of the vehicle clearance requirements. Additional signage has also been put up at the Camp to remind and reinforce this monitoring. Due to the nature of the work, the monitoring generally yields radiation values of around background level and no emergent weeds have been identified. In addition, as part of the monitoring LCR pays particular attention to radiation levels of drill rigs which may directly encounter mineralisation.

5.7 Emergency Procedures and Incident Reporting

As part of LCR's operating management system all environmental incidents, near misses and hazards are to be reported. LCR will notify relevant authorities of any environmental incident that results in non-compliance with regulatory conditions within 24 hours of the event occurring. Various procedures will be tested on a regular basis. LCR will implement the following steps in the event of an environmental incident:

- Undertake immediate inspection, temporary control and internal notification to management and outside authorities if relevant;
- Notification of Traditional Owners' representative (Monitor);
- Identify corrective actions to be undertaken to mitigate any adverse consequences;
- Follow up to ensure corrective actions are implemented;
- Identify changes to work procedures to ensure the incident does not re-occur;
- Emergency response is supported by SAT phones in vehicles and Camp Caroline, Emergency Position-Indicating Radio Beacons (EPIRB), first aid kits, adequate provision of drinking water, and fire extinguishers, in all vehicles.

LCR has a range of Emergency Procedures in place including:

- Medical Evacuation Procedure;
- First Aid Emergency Response Procedure;
- Search and Rescue Emergency Response Procedure;
- Helicopter Search and Rescue Emergency Response Procedure;

- Bushfire Emergency Response Procedure;
- Fire Emergency Response Procedure;
- Radioactive Spill Response Procedure.

LCR has a current Risk Management Plan with NT WorkSafe.

All reportable incidents will be notified to NT WorkSafe as required under the Work Health and Safety (National Uniform Legislation) Act 2011 and Regulations 2011. The NT WorkSafe Incident Notification Form FM137 will be used for reportable notifications.

All environmental incidents will be reported to the Mining Compliance Division of DPIR as soon as practicable, as per Section 29 of the Mining Management Act. When the incident is reported in writing, the 'Notification of an Environmental Incident' form will be used. A register will be kept on site documenting environmental incidents.

LCR have no environmental incidents documented in the last reporting period.

5.7.1 Documentation

All incidents will be reported to the LCR Management and DPIR. All employees and contractors are briefed on the procedures and documentation required in case of an emergency at site inductions. Incident reporting forms allow staff to review and take corrective and preventative action for the future.

5.7.2 Consultation

LCR have a policy of open and continuous consultation with stakeholders. In relation to the Traditional Owners of the area, this is facilitated in part by employing Cultural and Environmental Monitors during the field season – LCR will consult with the NLC on these matters. In addition, LCR will consult with DPIR and ERISS for technical advice as required.

6 EXPLORATION REHABILITATION

6.1 Exploration Rehabilitation Register

Please refer to Appendix 1.

6.1.1 Status of Current Rehabilitation & Rehabilitation Activities Conducted

Upon completion of the previous drilling programmes, the drill holes were plugged, buried. The sumps were allowed to evaporate and subsequently in-filled with the stockpiled soil and topsoil. Drill pads were restored as near as possible to original land form shape, with any topsoil and cleared vegetation redistributed over the drill pads, allowing them to self-seed during the following wet season. Post rehabilitation visual monitoring of rehabilitated areas was been undertaken.

In addition, due to the nature of the exploration, radiation monitoring is undertaken on each drill pad. As expected from the drilling results, no elevated radioactivity has been detected as a result of drilling.

Following the 2010 drilling, LCR has not undertaken any significant disturbance.

A trip was planned during early 2017 to visit drill pads to obtain recent monitoring and photographic information on rehabilitation. Unfortunately this trip was delayed and not yet undertaken as at the date that this MMP was prepared. LCR undertakes and commits to obtaining recent documentation of drill site rehabilitation on its next trip to the exploration area. Following this trip, data showing rehabilitation of these drill holes will be provided.

6.1.2 Rehabilitation Planning and Monitoring

Rehabilitation of areas disturbed during the exploration programme will be undertaken prior to closing out for the wet season. As access to proposed drilling locations will be along existing tracks, the main disturbed areas from the exploration programme will be drill pads and sumps.

The rehabilitation measures for these areas are outlined below:

- Access Tracks – will be rehabilitated at the completion of exploration programme if required. The length of proposed tracks has yet to be ascertained;
- Vegetation and any removed topsoil (if any) is respread;
- Remove culverts (if any) and re-establish natural drainage pathways (if disturbed);
- If seeding is required, direct seed using local provenance seed;
- Demarcate rehabilitated tracks as required.

Drill Pads – will be rehabilitated following completion or subsequent down-hole probing. All

drill sites will be stabilised and closed out at the end of the field season:

- Return any drill chips remaining to the hole or in-ground drill sump;
- Bury any other potentially uranium mineralised material in the in-ground drill sump at a minimum of 1m below surface;
- Plug or cap drill holes with concrete immediately following drilling to a minimum of 300mm below surface and backfill;
- All rubbish is removed from site.
- Reshape the pad similar to its original contour and incorporate appropriate drainage;
- Spread stripped sub soil and top soil;
- Re-spread cleared vegetation over the pad once topsoil has been replaced;
- If seeding is required, direct seed using local provenance seed.

Sumps – will be rehabilitated following drilling:

- Drilling fluid in the sumps is left to settle;
- Evaporate or pump any clarified water/liquids remaining in the sumps into surrounding bushland away from natural drainages;
- Backfill the sumps with slight mound to allow for subsidence;
- Spread stockpiled topsoil and vegetation.

Radiation measurements will be taken at each worksite to ensure that there is no radiological contamination of the surface soils.

Photographs will be taken at all drill sites prior to disturbance, following rehabilitation and at 12 monthly intervals or until rehabilitated. Inspections will monitor the success of regrowth and/or the establishment of weeds. Rehabilitation success will be measured against pre-disturbance landscape and remedial measures will be undertaken if erosion or other processes have shown to affect the rehabilitated site.

6.1.3 Topsoil Management

Topsoil is considered to be approximately the top 250mm of soil material and includes the surface humus layer of decaying vegetation. The depth of topsoil may vary depending on the geology of the location. Any topsoil or vegetative material removed during the clearing process will be stockpiled separately for use during rehabilitation.

6.1.4 Revegetation Methods

LCR has found that with the small areas of disturbance involved in drilling programmes, natural

re-colonisation of plants rapidly occurs over time, particularly if the topsoil is replaced. If monitoring outlined in section 5.2 shows natural revegetation to be ineffective then seeding with provenance species and/or weed control measures may be undertaken.

6.1.5 Fire Management

Drill sites are generally small in area and it is not practical to exclude fire from those specific areas.

6.2 Costing of Closure Activities

A security calculation of EL23573 has previously been undertaken and provided. If required, a revised security spreadsheet may be submitted if drilling of warranted targets is to be undertaken.