TENNANT GOLD PTY LTD

2018
Amendment September 2018

MINING MANAGEMENT PLAN

TENNANT CREEK PROJECT – NOBLES NOB & JUNO

Date	Prepared	Reviewed	Approved
03/09/2018	[redacted]	Tennant Gold Pty Ltd; Territory Resources	[redacted] Executive Chairman, Tennant Gold Pty Ltd

Contents

AMENDMENTS

Section	Amendment
3.0 Project Details	Updated missing tenement ID MLC521
3.2 Proposed Activities	Additional drilling in the historical Nobles Nob Pit; workshop area proposed
Table 4 and 6	Proposed drilling program added

1.0 OPERATOR DETAILS

Operator Name:	Tennant Gold Pty Ltd
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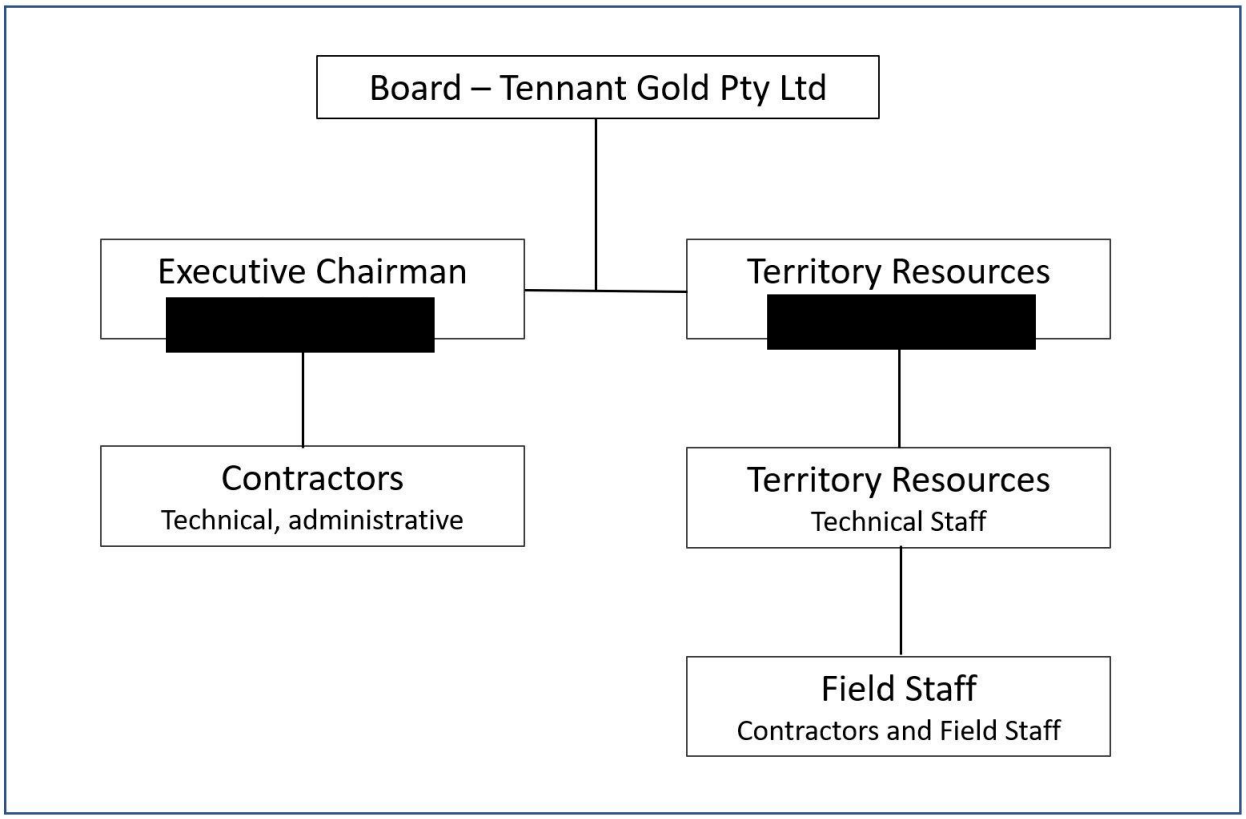
1.1 ORGANISATIONAL STRUCTURE / CHART



1.2 WORKFORCE

Currently, regarding field work, contractors are retained on an as required basis. With the commencement of the updated drilling program previously scheduled for 2017 and now planned for the 2018 program, up to five additional staff may be required for field activities.

Tennant Gold employs residents of Tennant Creek as field assistants for drill rig work and for rehabilitation. Other ancillary site works (such as earthworks) are performed by local earthmoving contractors.

2.0 IDENTIFIED STAKEHOLDERS AND CONSULTATION

The following stakeholders have been identified in relation to the project:

Stakeholder	Consultation
Warumungu Aboriginal Land Trust	The owner of the freehold land the project is situated on -
Central Land Council - Representatives of Warumungu Aboriginal Land Trust	Discussions during initial project approval phase
NT Department of Mines and Energy	Discussions during initial project approval phase, continued consultation via annual Mine Management Plans
NT Environment Protection Authority	Discussions during initial project approval phase
Australian Securities Exchange (ASX)	Provision of formal quarterly and annual reports
Tennant Creek Town Council	Discussions during initial project approval phase

The form of consultation will vary between stakeholder groups; for instance:

- Tenement holders are obliged under the *Mining Act 2007* to submit Annual Reports to DOR;
- Tennant Gold employees and contractors are consulted through oral and electronic communication. Any incident or issue in the Tennant Creek Project Area requiring the attention of the Tennant Gold board of directors would be in writing including email; and
- The EPA will be informed of any notifiable incident or issue in writing within the appropriate time scale.

No complaints or concerns have been raised with Tennant Gold by any stakeholders or others during the project.

3.0 PROJECT DETAILS

Project Name:	Tennant Creek Projects – Nobles Nob and Juno
Location:	Nobles Nob – 13 km south east of Tennant Creek Juno – 7 km south east of Tennant Creek
Site Access:	Via Peko Road, heading east out of Tennant Creek town centre
Mining Interest/s:	MCC284, MLC154-MLC155, MLC45-MLC47, MLC512-MLC517, MLC521, MLC525-MLC526, MLC531-MLC534, MLC537-MLC545, MLC548-MLC550, MLC556, MLC578-MLC579 MLC589-MLC590, MLC652, MLC68, MLC688-MLC691
Title holder/s:	Tennant Gold Pty Ltd, wholly own subsidiary of Tennant Resources Pty Ltd.

The project location and tenements comprising the Nobles Nob and Juno projects is presented in Figure 1.

3.1 PREVIOUS ACTIVITIES AND CURRENT STATUS

Historical Mining/Exploration

Historically, commencing in the 1930's several small underground gold mines were worked in the Project area by small syndicates. Examples include Rising Sun, Shaft 12, Kimberly Kids, and Weaber's Find. Ore from these mines was sent to a battery operated on a site close to Kimberly Kids Mine. The waste rock from the battery was later graded over the existing landscape.

Drilling 2011 - 2013

A small RC drilling program was conducted in November 2011 targeting shallow targets at Nobles Nob (Table 1 and Table 2). These drill pads have since been rehabilitated and were assessed during a site visit in April 2016. Photographs and notes from the Nobles Nob project are provided in Appendix A and photographs from the Juno project are provided in Appendix B.

In 2012, permission was granted for Excalibur Mining (project operator at the time) to drill 10 holes. Of the 10 hole program that was proposed in the 2012 MMP, only 5 holes were drilled and there has been no drilling since that time (Table 1 and Table 2). This was due to the disappointing assay results obtained from the initial 5 holes drilled. As a consequence, it was decided to abandon drilling and instead concentrate on mapping in order to redefine the geological structure and relocate the positions of the 5 undrilled holes. This process took some time as a full scale structural geological mapping program was needed plus a ground based gravity survey.

This survey was initiated because the major rehabilitation program that had been carried out in the area had destroyed fragile outcrops with ripping and scarifying of the surface and, as a consequence those areas could no longer be mapped. The 5 holes drilled in 2012 were assessed during a site visit in April 2016. Photographs and notes are provided in Appendix A.

Work carried out during 2013 consisted of non-invasive ground based activities using existing tracks. Gravity surveys and mapping were done on foot. No further ground disturbing works have been conducted on Nobles Nob or Juno since 2012.

Table 1: 2011 and 2012 Drilling Program Details

	Mining Interests (i.e. titles)			
	MLC689	**MLC688**	**MLC512**	**MLC513**
Number of holes drilled	5	2	2	1
Maximum depth of holes	100 m	258.2 m	324.3 m	321 m
Number of drill pads cleared (Length: 20 m x Width: 20 m)	5	2	2	1
Number of sumps cleared (Length: 5 m x Width: 2 x Depth: 2 m)	0	4	4	2
Length of line / track cleared (not including existing station tracks) (Width: 6 m)	200 m	20 m	150 m	150 m
Number of costeans excavated (Length: x Width: x Depth: m)	0	0	0	0
Total bulk sample pits excavated (Length: x Width: x Depth: m)	0	0	0	0
Camp area/s cleared	0	0	0	0
Total area disturbed (hectares)	0.32	0.092	0.17	0.13
Drill holes capped / plugged	Yes, all drill holes trimmed, plugged and buried below ground level	1 hole plugged, 1 not plugged. Both remaining to be trimmed and buried.	Both holes remaining to be trimmed, plugged and buried.	Drill hole remains to be trimmed, plugged and buried.
Total area rehabilitated (hectares)	0.2	0	0	0

Table 2: Drill Hole Locations From 2011 and 2012 Drilling Programs and the Rehabilitation Status (GDA 94)

Tenement	Drill Hole	Location	Rehabilitation Status	Reference in Appendix A
MLC689	2011-01	426527 mE; 7820226 mN; 53 K	Drill collar trimmed, plugged and buried below ground surface. Rehabilitation is minimal and may need some assistance to encourage growth of spinfex and shrubs.	Plate 8
	2011-02	426547 mE; 7820220 mN; 53 K	Drill collar trimmed, plugged and buried below ground surface. Rehabilitation is minimal and may need some assistance to encourage growth of spinfex and shrubs.	Plate 9
	2011-03	426564 mE; 7820213 mN; 53 K	Drill collar trimmed, plugged and buried below ground surface. Rehabilitation has made good progress and is comprised of numerous native species.	Plate 10
	2011-04	426546 mE; 7820131 mN; 53 K	Drill collar trimmed, plugged and buried below ground surface. Rehabilitation has made good progress and is comprised of numerous native species.	Plate 11
	2011-05	426540 mE; 7820176 mN; 53 K	Drill collar trimmed, plugged and buried below ground surface. Rehabilitation has made good progress with some native species.	Plate 12
MLC688	2012-01	426123 mE; 7819983 mN; 53 K	Drill collar exposed and uncapped. Drill pad poorly rehabilitated. Scattered rubbish across drill pad. Weeds - **Cenchrus ciliaris* and **Cenchrus setiger*. Sumps – two open trenches yet to be backfilled.	Plate 13
	2012-02	426198 mE; 7820008 mN; 53 K	Drill collar exposed just above surface, but collar is plugged with a plastic conical plug and rock. Drill pad poorly rehabilitated. Weeds - **Cenchrus ciliaris* and **Cenchrus setiger*. Sumps – two open trenches yet to be backfilled.	Plate 14
MLC512	2012-03	426185 mE; 7819928 mN; 53 K	Drill collar exposed and uncapped. Drill pad poorly rehabilitated - some *Acacia* shrubs but very low diversity and ground cover. Scattered rubbish across drill pad. Weeds - **Cenchrus ciliaris* and **Cenchrus setiger*. Sumps – two open trenches yet to be backfilled. One sump has rubbish and scrap metal in it.	Plate 15
	2012-04	426171 mE; 7819849 mN; 53 K	Drill collar exposed and uncapped. Drill pad relatively well rehabilitated. Weeds - **Cenchrus ciliaris, *Cenchrus setiger *Tamarix aphylla* (Athel Pine). Sumps – two open trenches yet to be backfilled.	Plate 17
MLC513	2012-05	426260 mE; 7819955 mN; 53 K	Drill collar exposed and uncapped. Drill pad poorly rehabilitated with dense weed cover - **Cenchrus ciliaris* and **Cenchrus setiger*. Sumps – two open trenches yet to be backfilled. Old concrete pad to be removed.	Plate 18

As indicated in Table 2, it was noted during the site assessment in April 2016 that some of the previous drill pad areas had minimal vegetation rehabilitating. This is likely due to the naturally skeletal and stony surface and low rainfall since rehabilitation activities. It is expected rehabilitation will naturally occur over time and it is recognised that new spinifex (*Triodia* spp.) growth typically takes time to establish. Tennant Gold will reassess the previous drill pad locations during the upcoming 2018 drilling program. Should it be considered some areas have still made insufficient progress in rehabilitation then these areas will be scarified to promote infiltration of rainfall and stimulate new growth. Although, given the substantial summer rainfall received from December 2016 – January 2017 in the Tennant Creek area, it is likely rehabilitation naturally progressed throughout 2017.

Environmental Status 2013 - 2014

During 2013, a Final Compliance Audit Report was issued (6th Nov 2013) following a site inspection carried out

between 15th and 17th of May 2013. The only outstanding problems identified in the report were the 5 Diamond Drill holes drilled in 2012 where the holes had been capped but not buried, and 4 sumps from the deeper drilled and undrilled holes which remained to be filled. These sumps do not pose a danger to stock and native fauna as they are shallow and shaped so that any animal straying into the sump can walk out. When new drill pads are cleared in the proposed drilling program, these sumps will be backfilled.

The Compliance Audit Report noted that some Rubber Bush Trees (*_Calotropis procera_*) needed to be sprayed and this was done on the 6th of May 2014. The area was checked by Excalibur staff 2 days later on the 8th May 2014. The rubber plants looked weaker but not yet dead so no photographs were taken at this time as staff returned to Perth the following day. The area was checked on the 9th May 2014 by the local weed spraying contractors to make sure that all rubber bush plants had been sprayed.

Current Status

The status of the Nobles Nob and Juno tenements were last assessed during a site visit conducted in April 2016. Comprehensive photographs and notes were recorded and are presented in Appendix A (Nobles Nob project) and Appendix B (Juno project) with drill holes and other features for Nobles Nob indicated in Figure 2 and features for Juno indicated in Figure 3.

The Rubber bush trees (*_Calotropis procera_*) were again observed during the site visit conducted in April 2016 (12th – 13th April 2016). The location of the Rubber bush trees is presented in Figure 2. Approximately 20 individual plants were identified on the south west side of the large pre-existing pit. Photographs are presented in Appendix A (Plate 22 and Plate 23). A weed management plan for this species is presented in Appendix C.

In addition to Rubber bush, Athel Pine (*_Tamarix aphylla_*) was also observed at Nobles Nob during the recent site visit (Figure 2). Two large trees were identified near an old drill pad. Photographs are presented in Appendix A (Plate 21).

The main access tracks at both Nobles Nob and Juno are in good condition and both sites are accessible via Peko Road, out of Tennant Creek. Some drill pads, including drill collars and sumps, have not been thoroughly rehabilitated yet. However, that will be finalised when a team is mobilised to site to conduct the proposed drilling program for 2018-2019. As the drill program is conducted, all remaining rehabilitation will be finalised during this period.

3.2 PROPOSED ACTIVITIES

Proposed Drilling For 2018

Tennant Gold is proposing to drill 51 new RC exploration across the Nobles Nob tenure area and 34 RC holes over the Juno area (Table 3 and 5). The drill programs are designed to test new exploratory mapping and gravity surveys that have been conducted within the Nobles Nob Tenement area as well as follow up prior drilling significant intercepts. The drill program is currently planned for Mid-late 2018. All outstanding rehabilitation will also be assessed during this time.

298 shallow air core holes are also being proposed over the historical waste dumps on the Noble Nob site (Appendix G). The new program will look at multiple elements including bismuth, copper, molybdenum and magnetite which the Tennant Creek mineralisation is known to be rich in as well as what would have been considered low level gold during the mining era of Nobles Nob. A track mounted rig is planned to be utilized for this program to limit any disturbance footprint and eliminate the need to cut into terrain.

All areas proposed to be explored have previously been disturbed and impacted by historical mining which has since been graded flat. Existing tracks will be used and drill pads of 20 m x 20 m (0.04 ha) will be cleared of existing gravel and rubble. Holes reaching depths past 200m may require sumps and as such up to 20 may be required.

Additionally, TRLTC proposes to re-enter the Nobles Nob open pit and commence exploration and resource definition activities. The work program is designed to test targets behind the north wall as well as remnant blocks of the northern lode.
It is proposed to establish a workshop area and refuelling location for the drill rig utilising the concrete slabs that once constituted the Nobles Nob Core yard. Area approximately 40 by 40 metres including Slabs.
No mining activity is planned during this program of works. The work will entail three (3) phases:

3.2.1 Access

Access to the Nobles Nob open pit has been restricted for several years. Rainfall runoff and erosion has caused substantial damage to the ramp and safety bunds. Rilling in the south-eastern corner has blocked the ramp to the point where it is unsafe for light vehicles to pass. We propose to use a hydraulic excavator and/or front end wheel loader to make repairs to the ramp and safety bund as well as remove the rill material in the south-eastern corner. Rill material will be used to re-sheet the ramp or build up the safety bund. Works will commence at the pit crest and progress down wards. Following the make-safe activities, a wheel grader will be employed to trim the ramp surface for access with light vehicles.

A geotechnical engineer was consulted in the development of this aspect of the plan. The engineer inspected the Nobles Nob pit in July of 2018.

3.2.2 Drilling

We propose to drill 75 new RC holes as described in table 3. We intend on using an Atlas Copco L8 drill. The program has been designed so that there is no requirement to dewater the Nobles Nob pit.

3.2.3 Water Quality Monitoring

With access to the base of the pit restored, we will collect water samples from the Nobles Nob pit water inventory. Water quality and other hydrogeological data will be essential for assessing any future mining activity.

3.2.4 Waste Rock Characterisation Sampling

Selected drill cuttings from this program of works will be sampled and retained for waste rock characterisation purposes.

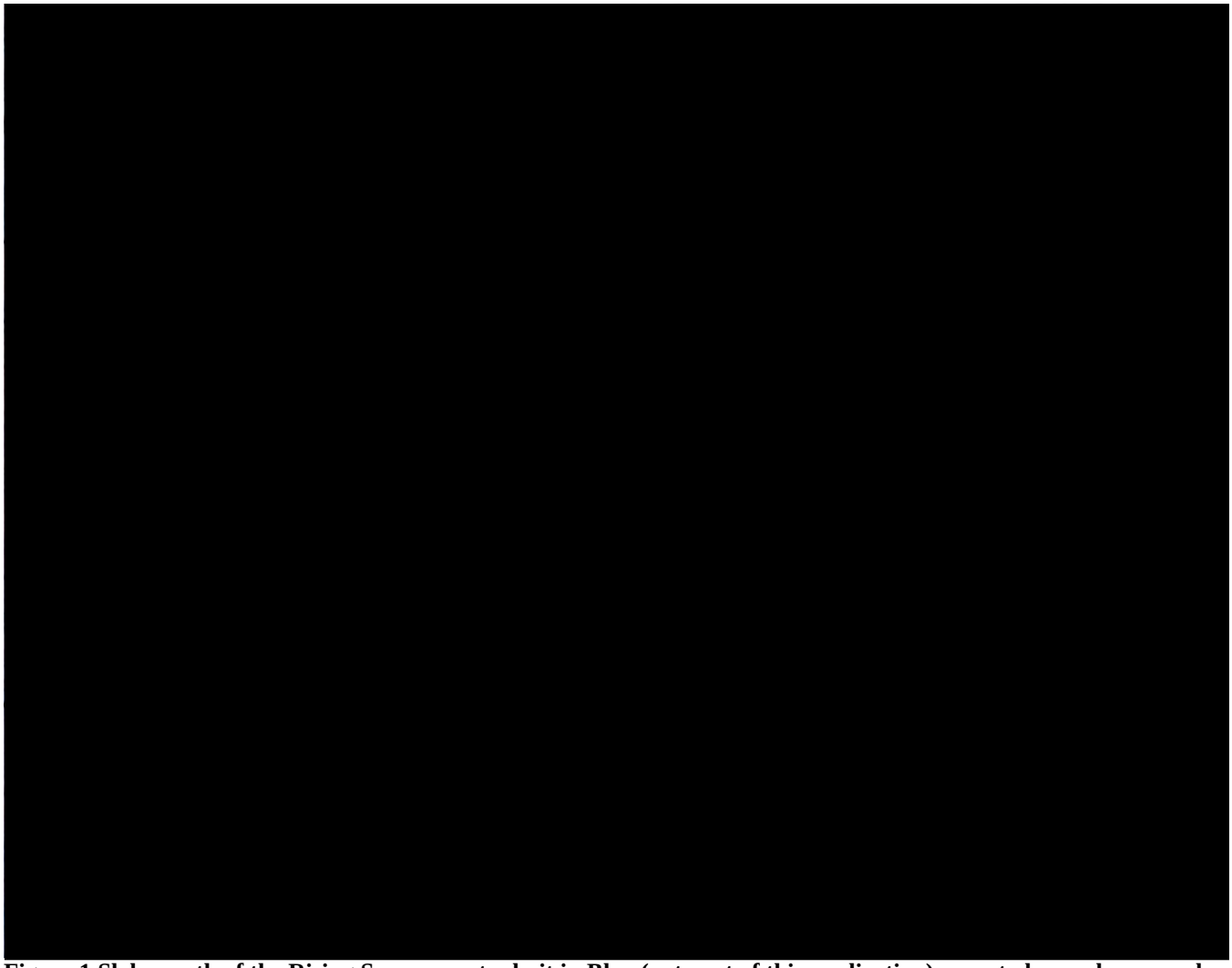
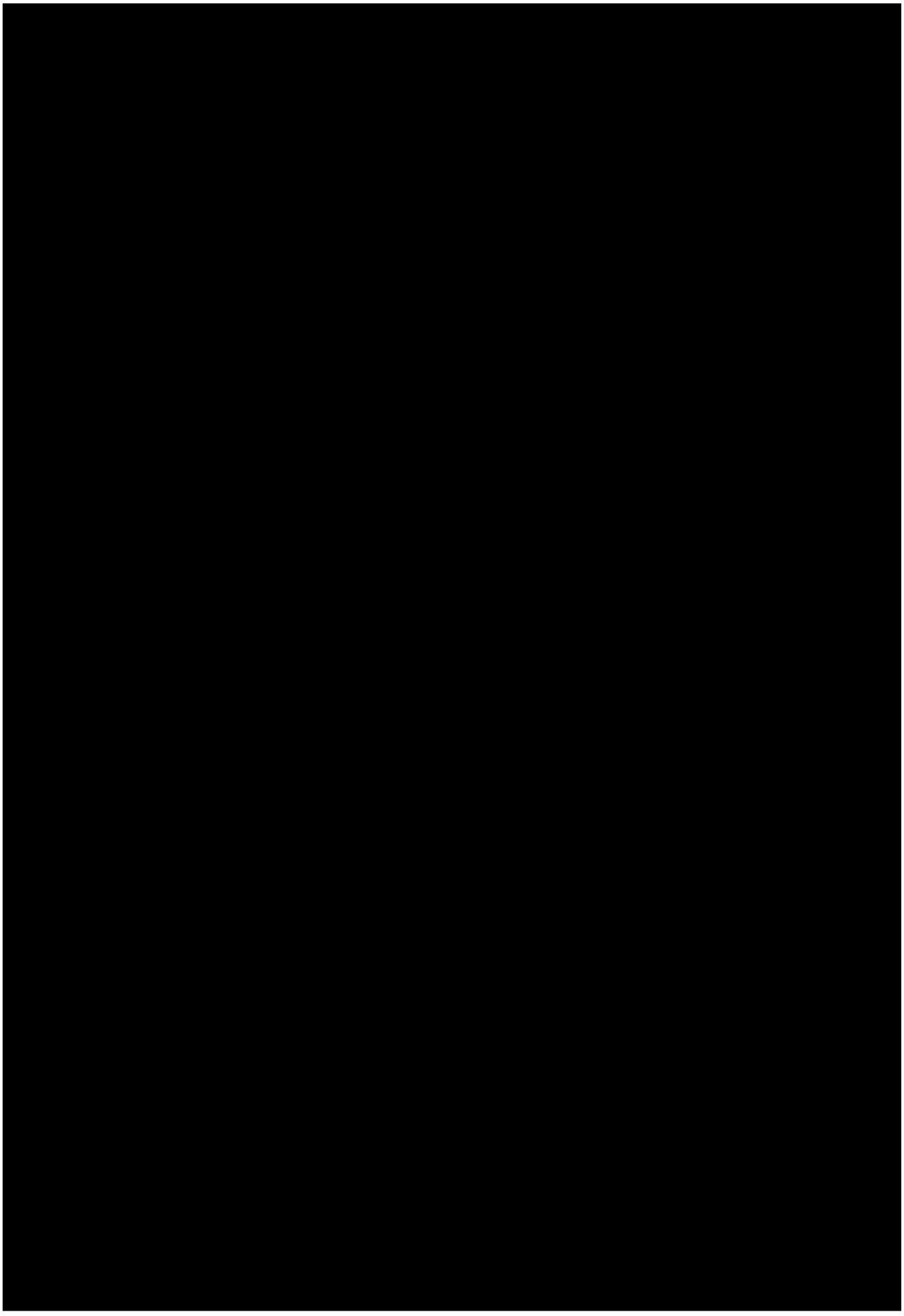


Figure 1 Slabs north of the Rising Sun conceptual pit in Blue (not part of this application), area to be used as a work shop in Red (inspected by the department on Monday 20th August).

Table 3: Proposed RC Drill Hole Locations for 2018 (Zone 53 K)



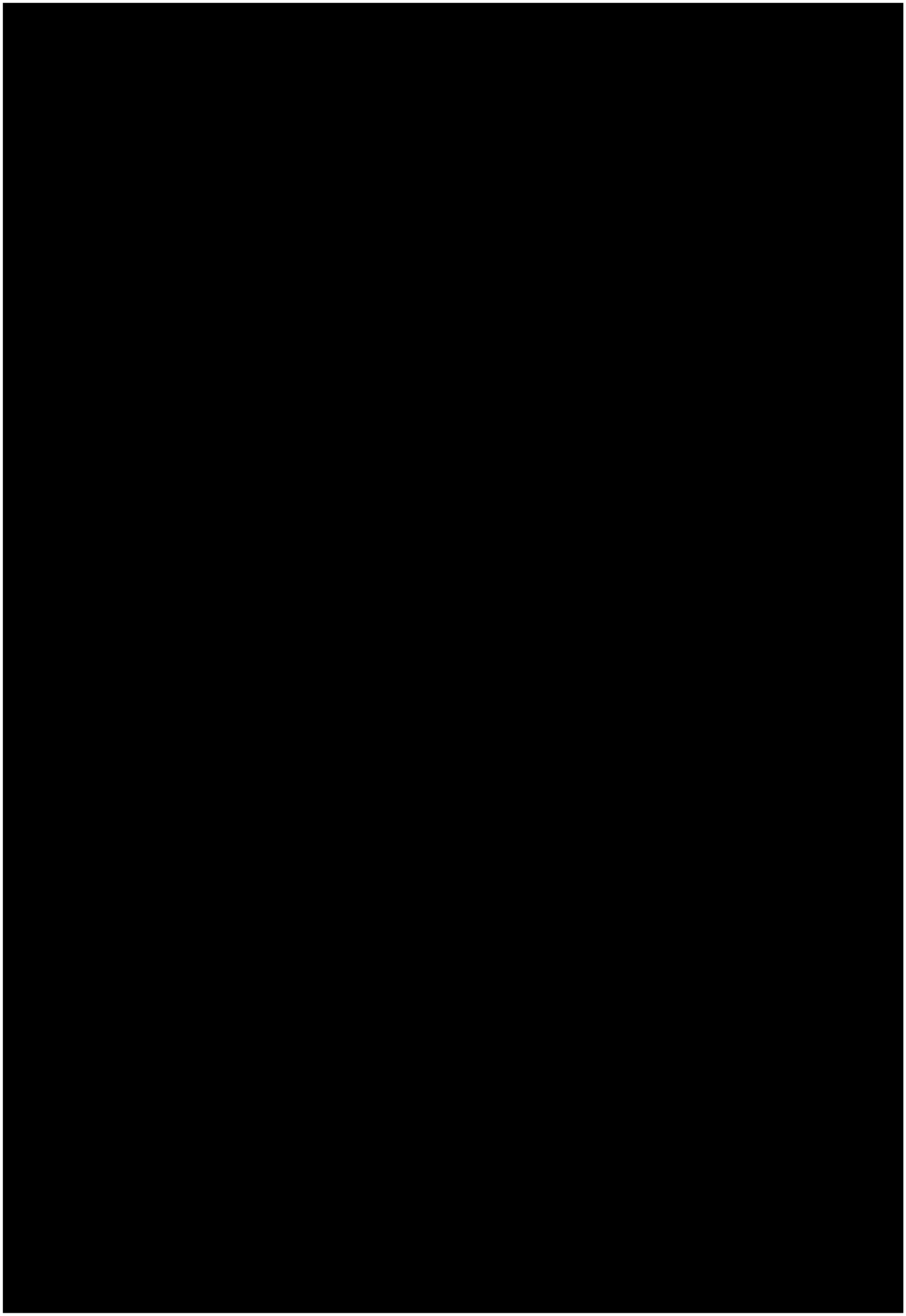
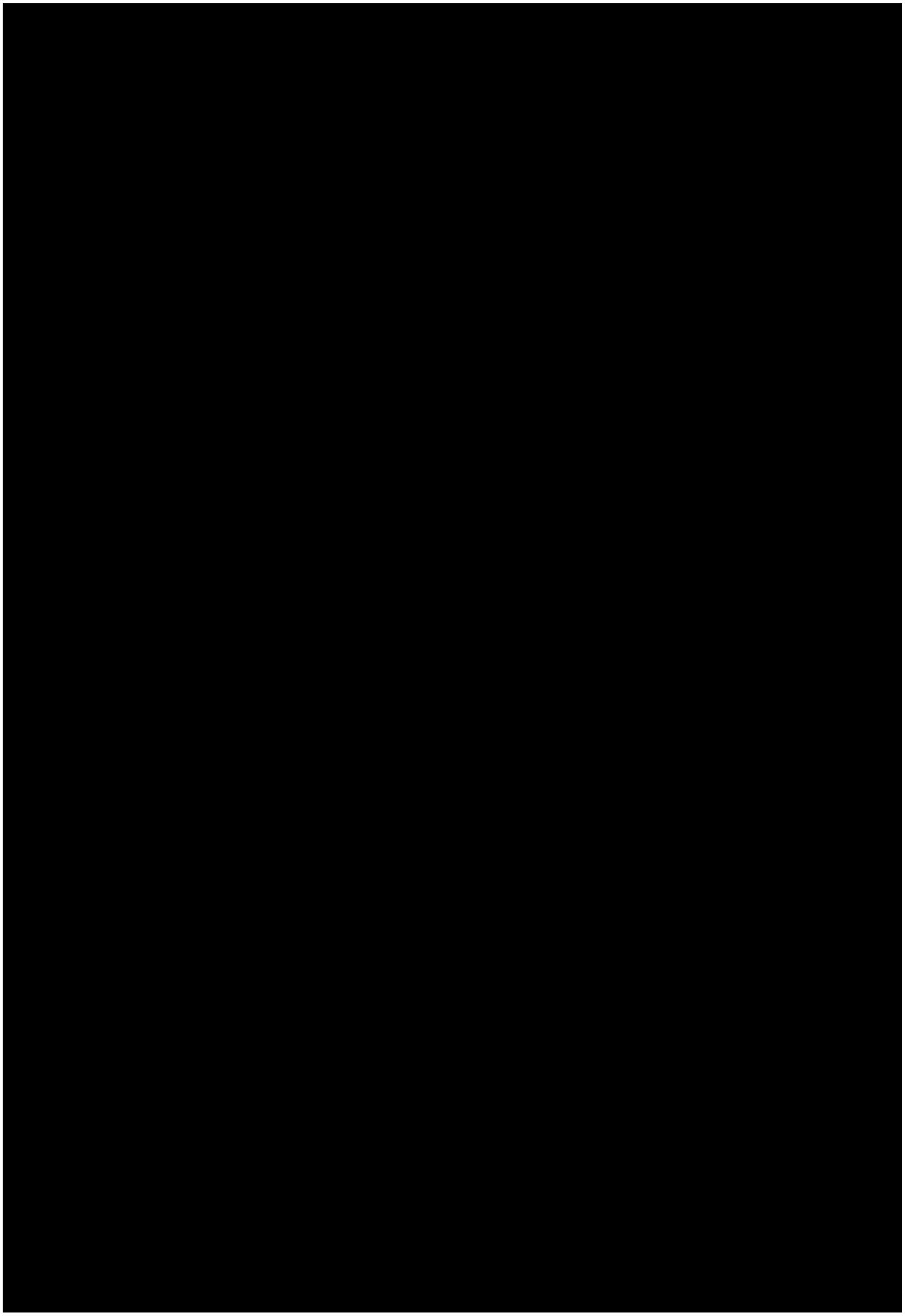


Table 4: Proposed Additional RC Drill Hole Locations for Nobles Nob Pit 2018 (Zone 53 K)



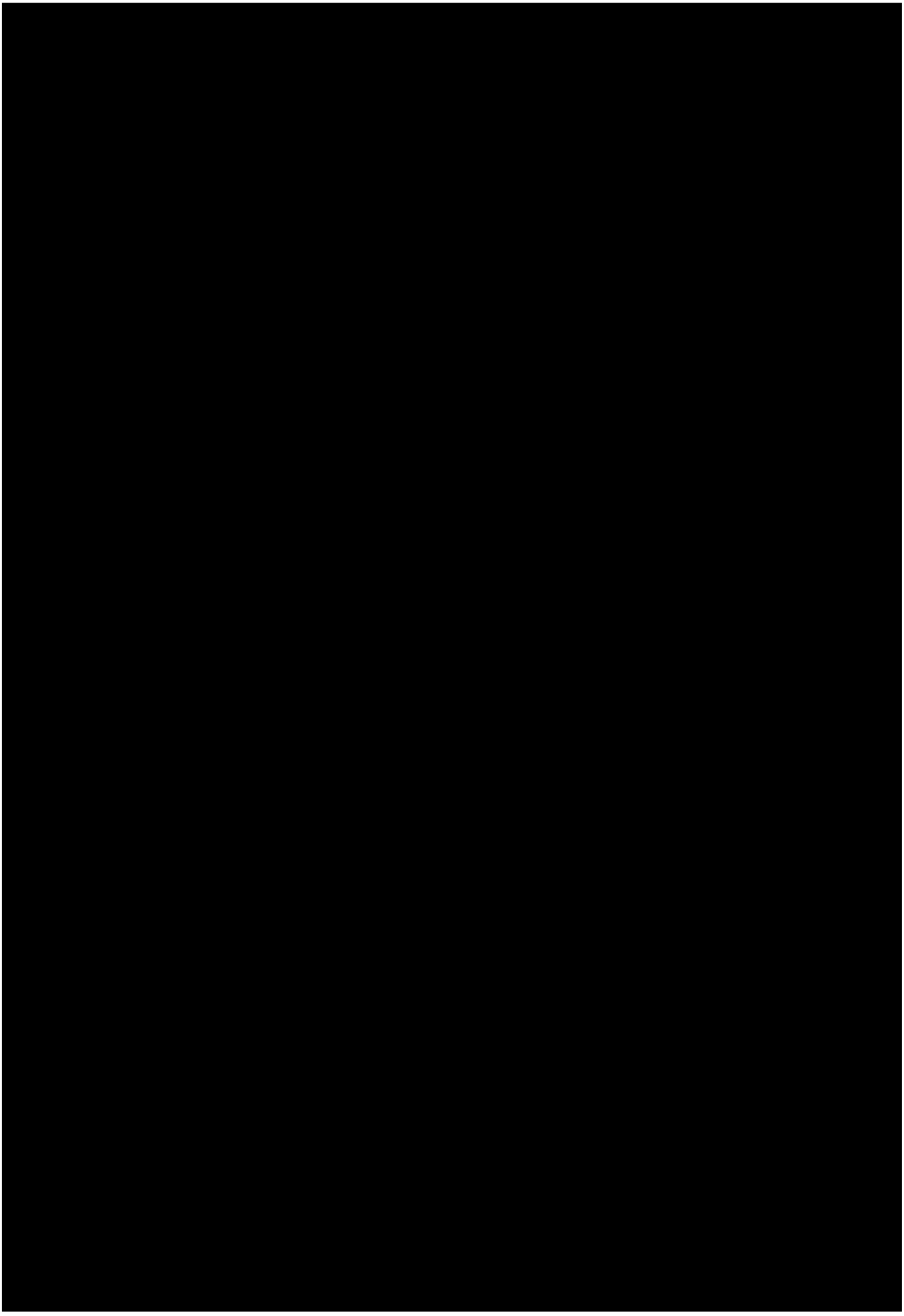


Table 5: Information for RC Drill Holes

Mining Interests (i.e. titles)	Nobles Nob, Juno
What time of the year will exploration occur?	2018 - 2019
How long is exploration expected to occur?	6 Months
Type of drilling (i.e. RAB, RC, Diamond, aircore)	RC and AC
Target commodity	Gold
Is drilling likely to encounter radioactive material?	No
Number of proposed drill holes	85 RC, 298 AC
Maximum depth of holes	250 m
Number of drill pads **(Length: 20 x Width: 20 m)**	85
Is drilling likely to encounter groundwater? **(Y, N, unsure)**	Only in deeper holes
Number of sumps **(Length: 4m x Width: 2.5m x Depth: 1 m)**	20
Length of line / track clearing **(Kilometres: x Width: m)**	2km x 2m
Number of costeans **(Length: x Width: x Depth: m)**	0
Total bulk sample (tonnes) **(Length: x Width: x Depth: m)**	0
Will topsoil be removed for rehabilitation purposes?	Topsoil reused for rehab
Previous disturbance yet to be rehabilitated on title (ha) if known	5 Sumps, 5 drill pads, 6 collars
Camp **(Length: x Width: m)**	N/A
Total area disturbed (hectares)	3.6 ha

Table 6: Information for Additional Noble Nob RC Drill Holes

Mining Interests (i.e. titles)	Nobles Nob Pit
What time of the year will exploration occur?	2018 - 2019
How long is exploration expected to occur?	9 Months
Type of drilling (i.e. RAB, RC, Diamond, aircore)	RC
Target commodity	Gold
Is drilling likely to encounter radioactive material?	No
Number of proposed drill holes	75 RC
Maximum depth of holes	150 m
Number of drill pads **(Length: 20 x Width: 20 m)**	0
Is drilling likely to encounter groundwater? **(Y, N, unsure)**	No
Number of sumps **(Length: 4m x Width: 2.5m x Depth: 1 m)**	0
Length of line / track clearing **(Kilometres: x Width: m)**	0
Number of costeans **(Length: x Width: x Depth: m)**	0
Total bulk sample (tonnes) **(Length: x Width: x Depth: m)**	0
Will topsoil be removed for rehabilitation purposes?	Not Applicable
Previous disturbance yet to be rehabilitated on title (ha) if known	0
Camp **(Length: x Width: m)**	Not Applicable
Total area disturbed (hectares)	0

CURRENT PROJECT SITE CONDITIONS

4.1 GEOLOGY

The Project area is located within the Proterozoic Tennant Creek Inlier, which is comprised of a turbiditic flysch sedimentary sequence abutting various volcanic rocks. In the Tennant Creek region, these rocks are typified by the Warramunga Group, which commonly strikes east-west with variable dip. These rocks have been intrused by various granites and deformed by the Tennant Event of 1850 Ma.

Gold-copper-bismuth mineralisation has been found to be hosted by fine grained haematitic mudstones and shaley siltstones. The mineralisation is poddy in nature and is typically located within steep dipping hinge zones of regionally minor folds with localised shearing and accompanying chlorite and silica with or without dolomite alteration. These dilation zones of rich gold mineralisation are also typified by strong magnetite alteration below the base of oxidation. Above the base of oxidation the magnetite is chemically weathered to haematite.

The distribution of the metals is variable, with no direct correlation between bismuth, gold and copper though some of the better known deposits display zonation. For example, it is common to find an outer magnetite/dolomite altered copper zone, a mixed magnetite-silica bismuth zone and magnetite plus gold zone in the core. The mineralisation style at Tennant Creek is generally small tonnage but high grade pods of iron rich mineralisation. Gold is also generally very fine grained in fresh deposits, but very coarse and nuggety in the oxidised deposits, such as Nobles Nob (Excalibur 2012).

4.2 HYDROLOGY AND HYDROGEOLOGY

The Project area experiences a semi-arid and monsoonal climate, with approximately 75% of the annual rainfall occurring over four months from December to March. The nearest meteorological station, Tennant Creek Post Office, receives an average rainfall of 370 mm per annum.

The Tennant Creek Project area has no natural permanent surface water. Surface drainage is generally undefined with water movement by sheet flow with some ephemeral creeks that flow briefly during the wet season. Two shallow dams, constructed to supply water for treating ore at Nobles Nob Mine, occasionally hold water throughout the year. The bottom of Nobles Nob open pit has a permanent pool of water, indicating that the water table is about 100 m below the surface.

All of the Juno tenements are either wholly or partially within the Tennant Creek Water Control District, and are subject to conditions that prohibit acts of pollution of, or disposal of waste into groundwater, unauthorised extraction from or recharge to aquifers. Subsurface water could be encountered in deep drill holes. The Juno Mine (an underground operation) had a reputation for being “wet”. This operation reached a maximum depth of 280 m (Excalibur 2012).

4.3 FLORA

In October 2009 (dry season) and March and April 2010 (wet season), flora surveys were undertaken across the project tenements by EcoScience NT. The aim of the surveys was to characterise the vegetation communities and flora within the tenements, with a particular focus on rare, threatened and endangered species.

A total of 179 species of flora from 39 families were recorded during the two flora surveys conducted by EcoScience NT. Of these, 91 species were recorded during the dry season survey and 143 during the wet season survey. Families with the highest number of species recorded in the study area included Fabaceae (39 species), Poaceae (32 species) and Myrtaceae (11 species). A full flora species list is presented in Appendix D.

No Threatened flora or flora of conservation significance declared under either Commonwealth (*Environmental Protection and Biodiversity Conservation Act 1999*) or Northern Territory legislation (*Territory Parks and Wildlife Conservation Act 2000*) as Critically Endangered, Endangered or Vulnerable were recorded during the field surveys.

No species of conservation significance and no species endemic to the Northern Territory were recorded during the flora survey, indicating that the flora present is comprised of relatively common and widespread species. No threatened flora species have previously been recorded within the survey area. Given the level of current and previous disturbance to the site, and the absence of vegetation communities likely to support threatened species, the potential for species of conservation significance to be found over the Project area is unlikely (Excalibur 2012).

4.4 VEGETATION

Four vegetation types associated with two landform features were identified over the Project area (Table 5). No vegetation communities or ecological communities of listed conservation significance were recorded within the Project area during the 2009/2010 flora surveys. Furthermore, no listed threatened vegetation communities are known to occur within a 50 km radius of the Project area. Given the relatively extensive NT distribution of each of the major vegetation communities found within the Project area and the absence of any vegetation types with significant conservation status at either NT or Commonwealth level, it appears that the existing vegetation does not have outstanding ecological value in the local, regional or national contexts (Excalibur 2012).

Table 5: Landforms and Associated Vegetation Types of the Tennant Creek Survey Area

Landform	Vegetation Type	Description	Northern Territory Reservation Status
Upland Communities	*Eucalyptus leucophloia* open woodland	Upland habitat occurred extensively within the Project area and generally a single tree species, Snappy Gum (*Eucalyptus leucophloia* subsp. *euroa*), was dominant throughout.	Occurs extensively in the Northern Territory, covering over 25,000 km^2. This community is common and widespread and has no formal conservation status either at NT or Commonwealth level.
	Triodia pungens (Spinifex) grassland	The tops of mesas and low hills in the Project area were characteristically vegetated with *Triodia pungens* dominated grassland.	Occurs extensively in the southern region of the NT with an area of over 210,000 km^2. This community has no formal conservation status, either at NT or Commonwealth level.
Lowland and Drainage Communities	*Eucalyptus pruinosa* low woodland to low open woodland	Broad drainage ways and valley floor habitats generally had low open woodlands dominated by *Eucalyptus pruinosa*.	This community is widespread, covering an area of 14,442 km^2 in the NT and has no formal conservation status either at NT or Commonwealth level.
	Eucalyptus aparrerinja woodland to open woodland	White Gums (*Eucalyptus aparrerinja*) formed a distinctive community on the fringes of floodplain areas, in riparian and minor drainage line habitats. This community was relatively restricted in distribution within the Project area, forming a narrow buffer between upland and lowland habitats.	This community is not sufficiently extensive to be mapped at a regional level. It has a relatively limited distribution within the Project area, but does not contain threatened species or ecological communities of recognised conservation significance. This vegetation type has no formal conservation status either at NT or Commonwealth level.

4.5 WEED SPECIES

Two introduced weed species were recorded during the dry season survey conducted by EcoScience NT – the

widespread grass *_Cenchrus ciliaris_ (Buffel Grass) and the prickly shrub *_Parkinsonia aculeata_ (Parkinsonia). During the wet season survey, a total of nine introduced species were recorded, including three Class B declared species: *_Calotropis procera_ (Rubber Bush), *_Parkinsonia aculeata_ and *_Sida cordifolia_ (Flannel Weed).

Although Buffel Grass was common throughout most lowland habitats, other weed species were not particularly widely distributed or abundant within the Project area. Weed infestations within the Project area were mainly restricted to the fringes of tracks and associated with soil erosion along creeklines and as a result of grazing. Each of the three Class B weeds was restricted in their distribution, with only a few plants of each species observed within the Project area. Under Northern Territory legislation (*Weeds Management Act 2001*), landholders are required to control the growth and spread of Class B weeds.

*_Calotropis procera_ and *_Tamarix aphylla_ (Athel Pine) were recorded onsite at Nobles Nob during a recent site visit (April 2016). The NT Department of Mines and Energy (now Department of Primary Industry and Resources) requested a weed management plan for *_Calotropis procera_, and as such, this is provided in Appendix C.
Overall, despite the long history of disturbance due to a range of different factors the Project area had a relatively low incidence of weeds.

4.6 FAUNA

Field fauna surveys were conducted in the Project area in October and November 2009 (dry season) and March and April 2010 (wet season) by FaunaAssess (2010). The aim of the surveys were to conduct a comprehensive investigation into the key fauna values of the Project area that recognised seasonal changes in fauna communities.

Most species recorded in both surveys were from plains habitats and appeared to be patchily distributed across the Project area. Some of these distributions were probably due to unnatural variations as a result of previous disturbance in soils, vegetation and water across the Project area. The most obvious seasonal differences in fauna communities between seasons was for frogs. While no frogs were recorded during the dry season survey, a suite of common semi-arid frog species was recorded during the wet, mainly around the margins of machine scrapes. Disused adits and shafts in the Noble's Nob area have been colonised by a number of species of microbats and there was substantial breeding activity in these roosts during the survey period. These areas may have become important at the local or regional level for some microbat species. The identification of each species of microbat recorded in the fauna surveys is detailed in Table 6.

Table 6: Microbat Identification from Field Assessments in 2009 and 2010

Microbat Species	Notes
Saccolaimus flaviventris Yellow-bellied sheath-tailed bat	Several good quality calls attributable to *S. flaviventris* were recorded in the east of the Project area (near Rising Sun and over Noble's Nob Pit).
Taphozous hilli Hill's sheath-tailed bat	Calls attributable to either *T. hilli* or *T. georgianus* were recorded at Noble's Nob West and probably at Juno. The frequency of the recorded call was higher than the known range of *T. georgianus* but the quality of the call did not allow confident separation of these species.
Chaerophon jobensis Northern free-tailed bat	*C. jobensis* was possibly recorded from a single call at Juno that appeared to exhibit the species typical erratic call in the appropriate frequency range.
Mormopterus beccarii Beccari's free-tailed bat	The species was positively recorded at the Noble's Nob pit.
Nyctophilus geoffroyi Lesser long-eared bat	A single *N. geoffroyi* was captured in a harp trap at Juno but no recorded calls could be attributed to the species.
Chalinolobus gouldii Gould's wattled bat	A single *C. gouldii* was captured in the Juno harp trap and possibly recorded from an adjacent site. The species was also positively identified from call data for another site, east of the Juno deposit.
Chalinolobus nigrogriseus	Due to similarities in call characteristics, records of *C. nigrogriseus* could not be

Microbat Species	Notes
Hoary wattled bat	reliably separated from those of *S. greyii* from the Project area. The species was therefore listed as only possibly occurring
Scotorepens balstoni Inland broad-nosed bat	Call quality did not allow the separation of *S. balstoni* and *C. gouldii* and both species were recorded as only possibly occurring at Juno
Vespadelus finlaysoni Finlaysons cave bat	This species was positively identified at locations across the Project area. A relatively large colony of about 100 individuals was recorded in an adit on the northern side of the Noble's Nob pit and their identities further confirmed by call recordings at the entrance at dusk. One individual of this species was captured in the Juno harp trap.

The Northern Territory Department of Natural Resources, Environment, the Arts and Sport (NRETAS) fauna records database and the Commonwealth Department of Environment, Heritage, Water and the Arts' (DEWHA) *EPBC Act* Protected Matters Database were both interrogated to determine the potential presence of any species of particular conservation significance within a 50 km radius of the project area. This search identified 10 species of fauna listed as either Vulnerable or Endangered under the NT *Territory Parks and Wildlife Conservation Act 2009* or Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* or both. The search of DEWHA's EPBC Act Protected Matters Database also suggested that seven *EPBC Act* listed migratory species could occur within 50 km of the project area. Profiles of each threatened and migratory species that may occur in the Project area are presented in Table 7, along with an assessment of the likelihood of each species occurring within the Project area.

Table 7: Fauna of Conservation Significance that May Occur within the Study Area (Excalibur 2012)

Species	Status	Target Habitat	Likelihood of Occurrence
Egernia kintorei Great desert skink	EPBC Act (1999) – Vulnerable TPWC Act (2009) – Vulnerable	Typically found on arid sandflats and swales that support hummock grasslands and scattered shrubs and on lateritic soils supporting Melaleuca shrubs along palaeo-drainage lines as well as on clay-based or loamy soils vegetated with spinifex.	All NT records of the species are to the west and southwest of the Project area with the nearest approximately 330 km west. Although some small areas of the Project area (clay-based soils with spinifex) could presumably support the species, this would probably represent marginal habitat and the lack of records of the species in the bioregion strongly suggests they would not occur.
Ardeotis australis Bustard	TPWC Act (2009) – Vulnerable	Typically occur in open habitats such as cultivated and natural grasslands (including spinifex), low shrublands (including saltbush and bluebush) and grassy open woodlands.	Bustards were recorded in grassy shrublands in the Project area, however its preferred habitats of grasslands and floodout areas are poorly represented. Within the Project area bustards are most likely to occur on a number of small relatively undisturbed habitat patches. As a consequence of the species' irruptive pattern of movements in semi arid areas, they are highly likely to occasionally re-occur in grassy lowland habitats in the Project area under 'attractive' conditions such as after fire or following heavy localised rainfall that may stimulate breeding of their invertebrate prey.
Dromaius novaehollandiae Emu	TPWC Act (2009) – Vulnerable	The emu is widespread across the Australian mainland being rare or absent only in the driest desert regions of the Northern Territory and Western Australia and in closely settled areas of south-eastern Australia	While emus are highly likely to occasionally move through the area, the degraded nature of habitats and consequent loss of food resources in the Project area means it would be less attractive to the birds than surrounding habitats.
Rostratula australis Australian painted snipe	EPBC Act, 1999: Vulnerable Migratory TPWC Act (2009) – Vulnerable	*R. australis* could occur on any shallow ephemeral wetlands in the central or southern Northern Territory.	The closest records of the species to the Project area are between 170 km and 220 km to the northeast, one from 1993 and two from 1906. The rarity of the species, particularly outside better-watered parts of eastern Australia, and absence of suitable breeding, refuge and feeding habitats in the project area indicates the species is highly unlikely to occur.
Dasycercus cristicauda Crest-tailed Mulgara	EPBC Act, 1999: Endangered TPWC Act (2009) – Vulnerable	Because of the previous lack of distinction between *D. blythi* and *D. cristicauda*, their individual distributions are yet to be fully defined. The combined ranges of both species cover much of Australia's arid zone and there is no clear separation of ranges of each in recent mapping.	The importance of sandhill habitats to *D. blythi* is unclear but the presence of hummock grassland (*T. pungens*) habitat between Juno and Noble's Nob (near Nobles Nob West) could possibly support this species if it persisted in the area. However, the occurrence of *D. blythi* in the Project area appears highly unlikely due to absence of habitat and records in the 50 km radius search area for over a century.
Isoodon auratus Golden bandicoot	EPBC Act, 1999: Vulnerable TPWC Act (2009) – Endangered	The species mainland range is restricted to a small coastal area of north western Kimberley region and populations survive on islands off the Western Australian coast and Marchinbar Island in the NT.	The golden bandicoot is no longer considered to occur in the southern and central Northern Territory and is highly unlikely to occur in or near the Project area.

Species	Status	Target Habitat	Likelihood of Occurrence
Macrotis lagotis Greater bilby	EPBC Act, 1999: Vulnerable TPWC Act (2009) – Vulnerable	Bilbies have larger foraging ranges than other medium-sized mammals indicating an adaptation to the variability of resource availability in arid areas. They occupy predominantly sandy landscapes that may also include rocky outcrops, laterite rises and low-lying drainage systems.	The lack of significant areas of its preferred habitat (sandy landscapes) suggests the degraded lowland habitats of the Project area would not be significant to the species under normal conditions. Under optimal seasonal conditions the Project area would likely remain unattractive compared with less disturbed habitats in the local area.
Notoryctes typhlops Southern marsupial mole	EPBC Act: Endangered TPWC Act: Vulnerable	The Itjaritjara has a strong association with sand dune systems and is highly adapted to burrowing through loose or only lightly cemented sand.	The lack of near records and absence of such sandy landscapes in or near the Project area means the species is highly unlikely to occur.
Petrogale lateralis Black-footed rock wallaby	EPBC Act, 1999: Vulnerable TPWC Act (2009): Near Threatened	The largest single continuous distribution is in the NT where an undescribed subspecies with its range centred on the MacDonnell Ranges extends north to the Davenport and Murchison Ranges near to the Project area.	Although the species was not observed in the Project area, some suitable rock shelters contain recent signs (scats) attributable to the species. Given these considerations, the Black-footed rock wallaby is highly likely to periodically move through the Project area.
Trichosurus vulpecula ssp. *vulpecula* Brush-tailed Possum	TPWC Act (2009): Endangered	The most widespread subspecies, *T. v. vulpecula*, occurs over much of eastern Australia but its arid and semi-arid distribution is now confined to several isolated populations in the south of the Northern Territory.	While the rocky outcrops of the Project area provide den sites for *T. v. vulpecula*, it is doubtful whether the disturbed vegetation communities would provide necessary food resources should it persist in the area. The lack of recent records of the species in the region supports NRETA's conclusion that the brushtail possum is extinct in the in the Davenport-Murchison Bioregion.
EPBC ACT MIGRATORY LISTED SPECIES			
Apus pacificus Fork-tailed Swift	EPBC Act Migratory Listed	Occupies low to very high airspace above all habitats; Airborne day & night (sleeps on wing).	Common wet season migrant to Australia. May occur over the Project area but area is extremely unlikely to be of significance to the species.
Ardea ibis Cattle Egret		Strongly associated with livestock and prefers wetland margins and wetter grasslands.	May periodically occur within the region but area is extremely unlikely to be of significance to the species due to lack of preferred habitats.
Ardea modesta Eastern Great Egret		Permanent and temporary wetlands & ponds, Estuarine mudflats, mangroves and reefs.	Common and widespread species that may periodically occur near shallow pools in the Project area during the wet season and transitional periods. May also be attracted to waterbodies within the Project area.
Glareola maldivarum Oriental Pratincole		Open plains and open areas around tidal flats, wetlands and beaches. Rests at hotter times of the day in flat open areas near water.	Non-breeding wet season migrant to Australia. May occasionally overfly or rest in Project area but the area is extremely unlikely to be of particular significance to the species.
Merops ornatus Rainbow Bee-eater		Forages in open airspace over a variety of habitats by hawking from exposed branches (avoids thick forests).	Common widespread species recorded from the Project area and adjacent areas during this assessment. Project area may provide suitable as breeding habitat. Preferred habitats locally well represented outside the Project area.
Charadrius veredus Oriental Plover		Semi-arid open grasslands, claypans and gibber plains. Occasionally where dense spinifex & heath habitats have been burned; Less often seen on coastal mudflats.	During migration gathers in large flocks on thinly vegetated grasslands in the north & forages with other migratory waders on coastal mudflats. Common late dry season migrant to inland Australia. Could possibly occur in small flocks in the Project area.

4.7 HABITATS

The Project area lies within the Davenport Murchison Bioregion. This 57,628 km^2 bioregion lies wholly within the NT and is dominated by pastoral leases (54%), Aboriginal freehold land (27%) and crown leases and vacant land (19%). Vegetation cover in the Project area has been described on the basis of four major natural plant communities and a single 'disturbed' category:

- Cleared areas
    - Much of the survey area has been previously disturbed and is at varying stages of recovery. These areas typically have minimal vegetation cover and are either the product of recent exploration activity or represent older disturbances in which all vegetation and topsoil has been removed and vegetation has been unable to re-establish.
- Snappy gum (*Eucalyptus leucophloia*) open woodlands
    - - Most of the relatively undisturbed habitat area adjacent to the Juno and Nobles Nob tenements comprises lowland plains dominated by snappy gum *Eucalyptus leucophloia* ssp. *euroa* open woodlands. Within the tenements most of this habitat has been disturbed by past mining activity and exhibits a patchy recovery.
- Spinifex (*Triodia*) grasslands
    - - Spinifex (*Triodia pungens*) grasslands occurred in different contexts in the two groups of tenements. At Juno spinifex occurred on heavy clay soils to the west and north of the main deposit while near Noble's Nob this grassland was associated with shallow lithosols, gravelly soils and rocky screes on slopes and surfaces of hills and plateaux.
- Drainage low open woodlands
    - - Low and low open silver box *Eucalyptus pruinosa* woodlands dominate the better-defined lowland drainage channels adjacent to Juno and Noble's Nob. In these poorly drained areas, fine-grained alluvial soils present more favourable growing conditions and support a diverse middle and ground plant strata.
- Drainage woodlands
    - - Adjacent to the project area, woodlands dominated by white gums *Eucalyptus aparrerinja* may form a distinct association between the higher margins of *Eucalyptus pruinosa* drainage line habitats and *Eucalyptus leucophloia* woodland habitats.

Habitats of the Project area are comparable with other parts of the bioregion that are dominated by rocky outliers of the Davenport and Murchison Ranges. However, most lowland (plains) habitats in the Project area (approximately 50%) have been significantly degraded by past mining activities. The net result of this disturbance is there are few substantial or contiguous patches of near natural lowland habitat remaining. The structural simplicity and relatively rapid regrowth of spinifex hummock (*Triodia pungens*) grasslands following disturbance means this association has substantially recovered from previous disturbance and may be significant to a number of reptile species.

The Davenport and Murchison Ranges are a NT 'Site of Conservation Significance' and lie approximately 55 km to the south of the Project area. Values of the site include the presence of two fauna species inferred from historical records in the region. These are the central rock rat *Zyzomys pedunculatus* and dusky hopping mouse *Notomys fuscus*. Both records are from 1953 and from over 180 km from the Project area. As such, neither species was included in database search results for the Project area and were not considered further. Due to the absence of comparable natural habitats (semi-permanent waterholes in rocky ranges), the Project area is unlikely to share any significant aquatic fauna values with the Davenport and Murchison Ranges (Excalibur 2012).

4.8 LAND USE

Due to the history of mining, grazing and other land use within the Project area, disturbance to vegetation (especially within the Nobles tenements) is particularly evident. The Nobles Nob open cut mine was previously one of the largest mines of this type in Australia and the pit and surrounding area remains a significant feature of the local landscape. Although areas of reasonably healthy remnant vegetation remain, the majority of the Project area is moderately disturbed with some areas significantly impacted by previous mining activities.

The Nobles Nob pit has been fenced-off for safety and environmental reasons (Appendix A, Plate 24 and Plate 25). The Tennant Creek Project area sits on Warumungu Aboriginal Trust land. There is currently no mining in the Project area and only intermittent exploration drilling programs occurring in recent years. Excalibur Mining had been exploring the area for gold since October 2007. The expected post-closure land use is for the continuation of the pre-mining land use. The open pit will be a legacy feature and will be left in a safe state with public access restricted for safety reasons. The project is not situated on an operational agricultural station.

4.9 HERITAGE

The Tennant Creek Project area sits on Warumungu Aboriginal Trust land. The Aboriginal Areas Protection Authority (AAPA) has advised that there are two recorded sacred sites within the Project area, one on MLC514, the other on MLC549. These two sites are indicated on Figure 2 (Centre point coordinates of each site GDA 94: 426618 mE, 7819748 mN & 425482 mE, 7820627 mN). Tennant Gold will not work on these sites without discussion with the CLC.

The Project area occurs on Mining Leases granted prior to Native Title allocation. However, Tennant Gold will continue to work in conjunction with the Office of Aboriginal Affairs over the coming years.

5.0 ENVIRONMENTAL MANAGEMENT SYSTEM

The tenure area has some vegetation and is covered with rubble from historical mining which has been scarified, ripped and graded flat. Trees will be avoided and raised blade clearing will be utilized. Existing tracks will be used and drill pads 20 m x 20 m will be cleared of existing gravel and rubble. Sumps will be backfilled after drilling unless they are expected to be reused by other holes to be drilled nearby. Green sample bags will be removed from site when all assay activity has ceased. Holes will be capped before the drill rig moves to the next drilling locality.

5.1 ENVIRONMENTAL POLICY AND RESPONSIBILITIES

Tennant Gold's activities will be carried out so as to protect the health of management, staff, employees, contractors, key stakeholders and community while paying proper regard to the protection and management of the environment. The primary goal of Tennant Gold's operations is to maintain the highest environmental standards. The Environmental Policy is presented in Appendix E and the Environmental Reporting Guidelines are presented in Appendix F.

Tennant Gold's exploration activities constitute a "Substantial Disturbance" as defined in *DoR Advisory Note AA7-012 Substantial disturbance in exploration*. Tennant Gold will undertake all activities in accordance with best practise environmental management and the following DoR Advisory Notes:

- Advisory Notes AA7-005 Clearing and Rehabilitation of Grid Lines and Tracks;
- Advisory Note AA7-006 Construction and Restoration of Costeans and Bulk Sample Pits; and
- Advisory Note AA7-029 Construction and Rehabilitation of Exploration Drill Sites.

To achieve this Tennant Gold shall:

- Ensure compliance with applicable Northern Territory and Federal laws, regulations, guidelines and procedures;
- Establish procedures to ensure effective implementation of its policy;
- Provide adequate environmental training and guidance to its employees;
- Instil a culture of continuous improvement through setting and reviewing targets, auditing and reporting environmental performance; and
- Undertake regular consultation with project stakeholders (both local and regulatory departments) to discuss any of their environmental concerns.

Tennant Gold expects all employees and contractors to:

- Comply with Tennant Gold's implemented environmental management policies and regulations;
- Review and strive to improve environmental practice;
- Report all environmental incidents to their immediate managers; and
- Identify and address environmental concerns through open and honest consultation with local community members and government departments.

5.2 STATUTORY AND NON-STATUTORY REQUIREMENTS

Primary legislation regulating mining activities:

- *Mining Management Act*
- *Mining Management Regulations*
- *Work Health and Safety (National Uniform Legislation) Act*
- *Mineral Titles Act*

Other relevant legislation:

- *Environmental Protection and Biodiversity Conservation Act*
- *Soil Conservation and Land Utilisation Act*
- *NT Plant Health Act*
- *Bushfires Act*
- *Weeds Management Act*
- *Environmental Assessment Act*
- *Environment Offences & Penalties Act*
- *Heritage Act*
- *NT Aboriginal Sacred Sites Act*
- *NT Environment Protection Authority Act*
- *Native Title Act*
- *Aboriginal Land Rights (Northern Territory) Act*
- *Public & Environmental Health Act*
- *Dangerous Goods Act*

Future reporting requirements of the project include:

- *Reporting requirements - production statistics employment/injury and safety statistics, water quality reporting*
- *Mining Management Plan - Conditions of Authorisation*
- *Mining Act - Title tenure conditions*
- *Workplace Health Safety 2007 – Section 65 - Notification of all reportable incidents*

Non-Statutory Requirements:
A tenement clearance was conducted by the Aboriginal Areas Protection Authority during May 2009. The Authority has no record of Registered or Recorded Sacred sites within the project area. There are however two restricted work areas recorded which are located within the tenements area. Tennant Gold will contact the Central Land Council (representatives of the landholders Warumungu Aboriginal Land Trust) to discuss any works that come within the tenements that have been listed as significant.

In addition, the Northern Territory Government introduced a Plant Health Manual in 2011 (since updated to Version 2.0 in 2012) to address the quarantine risk posed due to the movement of machinery and equipment. This manual was provided as a guide to the legal requirements outlined in the NT Plant Health Act.

5.3 INDUCTION AND TRAINING

All employees and contractors' personnel are informed of the environmental issues of the Tennant Creek Project, and issued appropriate instructions in an induction before commencing work on site. Contractors are required to produce documentation of their environmental credentials. Environmental Induction documentation is available for inspection at Tennant Gold's Tennant Creek office.
All Tennant Gold employees are provided with environmental induction training on joining the Company. Issues are specific to each operational site and are the subject of additional induction training, prior to commencement of an employee at each project area. All staff and drilling crews working in the proximity to Aboriginal sites of significance are provided with maps or shown the sites locality from a distance and asked to avoid such areas.
Short term contract personnel such as field support staff, local earth moving contractors and drilling contractors are also given an environmental induction as part of a general site safety induction. The induction is undertaken prior to commencement of work activities. The induction is related to the relevant work area and activities to be undertaken.
Training is provided to staff and contractors regarding the potential occurrence and identification of bustards, emus and black-footed rock wallabies. Staff and contractors are asked to avoid disturbing these species and to inform the site/project manager of any sightings.

During drilling program times, a weekly tool box meeting is undertaken on the work site where environmental issues and concerns are discussed and reported. Induction training includes:

- Environmental responsibilities and duty of care;
- Company policies, practices and procedures; and
- Environmental awareness.

Specific environmental issues covered in the induction include:

- Minimising soil disturbance;
- Washing down of vehicles to avoid the spread of noxious weeds (vehicle wash down area is at the Tennant Gold owned Exploration house / workshop in Tennant Creek on Brown Street. This area is paved and is monitored for weeds);
- Restricting travel through the leases to existing tracks to minimise disturbance;
- Avoiding travel on wet muddy tracks after rains to maintain the integrity of the tracks;
- Carrying any rubbish away and not burning it;
- Removing non combustible or non biodegradable rubbish from the exploration area;
- Storing chemicals and their containers away from surface or groundwater;
- Informing the pastoralist of excess ground water encountered in a drill hole;
- Using sumps to contain drill slurries and mud and back filling them after use;
- Cleaning up chemical and oil spills and removing all contaminated ground material;
- Sealing off and plugging the drill collar on completion of a drill hole; and
- Stockpiling top soil separately for later rehabilitation.

Inductees are required to sign a record of induction which is filed on site at Tennant Creek.

Excalibur had previously obtained literature detailing prominent invasive species likely to be present within the areas of exploration activities. These species include: Parkinsonia, Mesquite and Rubber Bush. Posters of these species have been put up around the Exploration house in Tennant Creek and copies have been placed in the exploration vehicle to aid in familiarising staff in their identification in the field. Tennant Gold will continue to ensure literature regarding weeds is available to staff and contractors.

5.4 IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

The key environmental aspects and impacts for the Project are listed in Table 8. The Risk Rating has been calculated according to the following risk matrix in Table 9, as provided in the Mining Management Plan and Public Report Guide for Exploration Operations (NT Department of Mines and Energy, 29 August 2016, V1.0).

Table 8: Environmental Aspects, the Associated Impact on the Environment and Proposed Management Measures

Aspect	Impact	Risk Rating	Management Measures (Prevention)	Management Measures (Remediation)
Clearing of Drill Pads	Ground disturbance	4	Develop a Standard Operating Procedure (SOP) for ground disturbing activities. Minimise the area of disturbance (eg. Use of existing tracks where possible). Limit the size of drill pads to that required for safe operation. Clearly mark the area to be disturbed prior to the commencement of ground disturbance.	Record and monitor all disturbed areas. Rehabilitate disturbed areas as soon as practicable. Audit rehabilitation on a regular basis.
	Loss of native flora	4	Develop a Standard Operating Procedure (SOP) for ground disturbing activities. Minimise the area of disturbance (use of existing tracks where possible; limit the size of drill pads to that required for safe operation). Avoid known locations of flora of conservation significance locations. Use raised blade clearing where possible. Check vehicles for weeds/soil before taking them to site and wash down in a designated area (workshop facility at Brown Street in Tennant Creek) if necessary. The vehicle wash down area is paved.	Stockpile cleared vegetation and topsoil for use in rehabilitation. Rehabilitate disturbed areas as soon as practicable. Undertake visual inspections for weeds and remove those that are identified. Audit rehabilitation on a regular basis.
	Loss of native fauna	4	Develop a SOP for ground disturbing activities. Minimise the area of disturbance (use of existing tracks where possible; limit the size of drill pads to that required for safe operation). Avoidance of areas in the vicinity of identified bat roosting sites. Visual inspections of the area prior to clearing, to look for signs of species activity. Limit vehicle speeds. Manage waste to prevent attracting feral animals.	Inspect trenches for trapped fauna. Rehabilitate disturbed areas as soon as practicable. Audit rehabilitation on a regular basis.
	Alteration of surface water flows	4	Minimise the area of disturbance (use of existing tracks where possible; limit the size of drill pads to that required for safe operation). Considering natural drainage patterns when establishing drill pads and tracks. Identify & avoid areas with a high erosion potential. Construct trenches and costeans across slopes.	Rehabilitate disturbed areas as soon as practicable. Audit rehabilitation on a regular basis.

Aspect	Impact	Risk Rating	Management Measures (Prevention)	Management Measures (Remediation)
	Erosion and sediment control	5	Minimise the area of disturbance. Considering natural drainage patterns when establishing drill pads and tracks. Identify and avoid areas with a high erosion potential.	Rebuild eroded areas as soon as possible and implement contours or earth bunds to divert surface water flow so as to reduce erosion. Set up sediment trap trenches to prevent further movement of sediment down contour during surface water flow periods.
Driving between drill sites	Spread of weeds	4	Only established tracks to be used. Check vehicles arriving on site for weeds and wash down in a designated area if necessary.	Regular environmental audits of sites. Undertake visual inspections for weeds and remove those that are identified.
	Loss of native fauna	4	Limit vehicle speeds.	Develop a reporting and incident feedback system.
Drilling	Dust and noise emission	5	Ensure drill equipment is appropriate, and SOP in place. Drilling will be wet to control dust. Sample bags will be used to prevent dispersion of drill samples into the environment.	Develop a procedure for the visual monitoring of dust.
	Spills or Leaks of Hydrocarbons and Hazardous Materials	5	No hydrocarbons or fuel is stored on site and this will not change in the near future. The only hydrocarbons onsite will be within equipment being utilised on site. Therefore, any spills would only be from equipment / machinery leaks. Construct sumps at drill sites, where necessary, to contain any water encountered during drilling process.	Clean up spills and leaks immediately and remediate contaminated areas. Remove contaminated soil off site for disposal at an approved facility immediately.
Drill hole capping	Loss of native fauna	4	Develop strict SOP practices. Cap open drill holes immediately following drilling.	Inspect open drill holes for trapped fauna. Environmental audits, develop timelines for work to be carried out.
Sampling	Potential for adverse effects on flora	2	Correct SOP for the sampling, train all staff.	Reporting of incidents, corrective actions in place.
Water flooding	Localised erosion, potential contaminants leaks	5	Ensure sumps are sized appropriately. Develop SOP's for containing spillages.	Correct incident reporting, apply corrective actions.
Fuel storage	Hydrocarbon spills	3	Fuel not stored on site.	Fuel not stored on site.
Ground water	Contamination	5	Diamond hole sumps are plastic lined.	Fill in sumps.

Aspect	Impact	Risk Rating	Management Measures (Prevention)	Management Measures (Remediation)
Open Drill holes	Fauna may fall in	3	All holes capped upon drilling completion.	All holes will have cut down casing plugs.
Waste	Attracts native and feral fauna	2	Remove all waste from site. Do not store waste on site.	Remove all waste from site. Do not store waste on site.
Cultural and Heritage sites	Impact to sacred sites	3	Restrict all project disturbance to approved areas. Do not operate any project tasks within the indicated restricted areas. Inform staff of the restricted areas so all site personnel know they are to be avoided.	Inform staff of the restricted areas so all site personnel know they are to be avoided.

Table 9: Risk Matrix Key

Key		Consequence		
Critical Risk		Low Little to no impact	Medium Medium term negative impact	High Irreversible or long term negative impact
High Risk				
Moderate Risk				
Low Risk				
Likelihood	High >75% chance event will occur in life of plan	4	7	9
	Medium 25%<>75% chance event will occur in life of plan	2	5	8
	Low <25% chance event will occur in life of plan	1	3	6

5.5 ENVIRONMENTAL AUDITS, INSPECTIONS AND MONITORING

Environmental audits and inspections are carried out at regular intervals to assess the progress of rehabilitation of the sites of exploration activities. A site inspection was conducted in 2016 with photographs and comments presented in Appendix A for Nobles Nob and Appendix B for Juno. No exploration has taken place since this time.

From the visit it was noted that there was good rehabilitation of drill pads with minimal disturbance. Although, some drill collars still needed to be trimmed, and capped below surface. At present the project operator has left these in place so new proposed holes can be safely placed nearby. These collars will be removed during the next rehabilitation program.

Excalibur (previous project operator) commissioned ENVIRON Australia Pty Ltd to undertake an environmental review of the Project with the view of conducting follow up audits in the future. This will include a site audit which will direct future environmental management at the Project site ensure rehabilitation commitments are being met.

5.6 ENVIRONMENTAL PERFORMANCE

Tennant Gold staff will inspect and monitor all drill pad sites and tracks at the end of each drill program and whenever staff are mapping or working in the area. When the sample bags are removed all sumps are in filled unless nearby holes are planned in which case both sump and drill pads are reused.

OBJECTIVES
The objective of the rehabilitation of the Project is to return the areas affected by exploration to their pre-impact state or an improved state. However, it must be recognised significant disturbance occurred to the areas prior to Tennant Gold taking over the projects. Tennant Gold has a policy of avoiding clearing substantial vegetation. As a result, mainly spinifex and small amounts of topsoil have been cleared to date.

PERFORMANCE
Vegetation regrowth in areas cleared in late 2007 has been successful to the point where the cleared areas are difficult to recognise. For the 2012 activity year, Excalibur undertook a significant rehabilitation program to generate improvements in environmental management issues at the Tennant Creek Project site. The 2013 activity year will allow monitoring of the projects rehabilitation program, with a second site audit due by Environ due in late 2012. This with the company's new EMP and drilling SOP's that focus on immediate rehabilitation action after drilling will vastly improve the environmental policies.

The site visit conducted in April 2016 recorded photographs and notes on the status of the 2011 and 2012 drill pads and took "before" photos of the proposed drill pad locations (Appendix A). The rehabilitation of previous drill pads is mostly good, although several drill collars remain to be trimmed and sumps backfilled.

5.7 EMERGENCY PROCEDURES AND INCIDENT REPORTING

In the case of a significant incident occurring on the Tennant Creek Project as a result of undertaking the exploration program outlined above, the activities on site will cease immediately. All employees will be evacuated from the area of the incident.
As soon as practicable after the operator of the exploration project becomes aware of the occurrence of a significant incident on the site, the operator will notify the Head of the Department of Mining Performance of the Northern Territory DME of the occurrence. The operator will also give the Head of the Department of Mining Performance written confirmation of the occurrence as soon as practicable after the notification.

The immediate area of the environmental incident will be cordoned off. A full investigation will be undertaken to determine the cause and what remedial action is required. Advice will be taken from the Department of Resources on when activities can resume.

Examples of significant incidents that would require reporting include:

- Significant (large) oil / chemical spill;
- Bush fire;
- Large scale damage to a plant species; or
- Large scale damage to an animal species.

Tennant Gold will implement the following steps in the event of an environmental incident:

- Undertake immediate inspection, temporary control and internal notifications of Tennant Gold management;
- Record date, time, duration and root cause of the incident or exceedances;
- Using a risk based approach, determine the severity of the incident and priority, taking into account the nature and extent of the environmental impact;
- Identify personnel to be involved in the investigation and corrective actions;
- Identify and implement corrective actions to be undertaken or planned to mitigate adverse environmental consequences;
- Follow up on recommendations to ensure corrective actions are completed;
- Identify changes to work practices or operations that are required to ensure that the incident will not re-occur, together with a timetable for implementation of those changes; and
- Advise relevant authorities of final outcome of incident management (as necessary) or any long term initiatives proposed to manage residual impacts from the incident.

Serious accidents and critical incidents, as defined in the *Work Health and Safety (National Uniform Legislation) Act 2011,* will be reported to senior management and to WorkSafe NT. As of July 2012, all environmental incidents must be recorded in a site register. The severity of the incident is to be assessed using the matrix presented in Section 5.4 (Table 9). Incidents rating Class 2 and above are to be reported to the Chief Executive Officer of the DPIR.

The Tennant Creek Project is within mobile telephone range. Mobile telephones are carried by all personnel working on-site. Emergency services based in Tennant Creek will be contacted immediately once an emergency arises. This includes outbreak of fire, chemical or fuel spill, uncontrolled water discharge or serious injury to personnel.

Hydrocarbon spills would be limited in size to the fuel tank capacity of any drill rig or support truck. Large fuel storage tanks are not required on site as fuel requirements can be met by refuelling in Tennant Creek, which is within 20 km distance of all Project areas. In the event of a fuel or oil spillage, the spill will be contained; the source isolated and recovered immediately using absorbent materials, which shall then be placed in disposable drums or containers for later removal to an approved waste disposal facility. Any contaminated soil or absorbent material resulting from a fuel or oil spillage will be removed to an authorised waste disposal site. Where necessary, validation sampling will be undertaken to verify that all contaminated soil has been removed.

Groundwater discharge may occur from RC drill holes, in which compressed air is used to bring samples to the surface. The returning air can entrain groundwater to the surface with the sample. Discharges would be controlled by providing sumps or portable water tanks to contain the water and terminating the hole if the water flow threatens to overwhelm the sump.

Other stakeholders/groups that may need to be notified or consulted are listed in Table 10 below:

Table 10: Tennant Creek Project Stakeholder/Action Group Contact Detail

CONTACT	Local Phone
Tennant Gold – Perth Office	(08) 9429 2900
[redacted]	
Tennant Creek Pastoral Station	(08) 8962 2080
St John's Ambulance Tennant Creek Officer in charge	(08) 8962 1144
Barkly Shire Council	(08) 8962 0000
Tennant Creek Hospital	(08) 8962 4399
Tennant Creek Police	(08) 8962 4444
Tennant Creek Fire Station	(08) 8962 2282
Tennant Security Services Tennant Creek	(08) 8962 1341

6.0 EXPLORATION REHABILITATION

Some rehabilitation of the Project area has been undertaken by previous holders of the tenements such as the removal of old buildings. In 2011-2012 Excalibur continued with rehabilitating historic areas. Mine areas in the vicinity are indicated in Figure 4 below. Previous disturbance and the rehabilitation status of historical mine activities are outlined in Table 11 Rehabilitation planning will focus on the rehabilitation of current and upcoming exploration activities, as outlined in Table 12.

At Juno, buildings have been dismantled and removed leaving concrete foundations, and footings for the headframe (which has been removed). Ore was treated elsewhere, so there are no tailings dumps on site. Much of the development waste was returned underground as stope fill for ground support, leaving very little waste rock on site. Some areas have been ripped, and natural regrowth has occurred in the thirty years since mine closure.

Nobles Nob was originally an underground mine until the roof pillar collapsed in 1967, rendering the workings inaccessible. From 1968 to 1985 the mine was worked as an open pit, which has not been backfilled. Natural regrowth has occurred on the waste dump despite the lack of topsoil. Tailings dams are still visible although rehabilitation is progressing and has good coverage. These tailings may contain economic quantities of gold. An assessment of the gold potential of the tailings is ongoing.

Small underground mines in the vicinity of Nobles Nob (Weaber's Find, Kimberly Kids, Archangel, Rising Sun and Rising Sun West) began in the 1930's, and sent their ore to batteries in Tennant Creek, so there are no tailings dams in their vicinity. Waste rock brought to surface was incorporated into the shaft collars, but little rehabilitation has been done.

Rising Sun West was also worked in the 1980's as an underground mine, with ore sold to Australian Development Limited for treatment at Nobles Nob. Rising Sun has an open hole measuring approximately 25 m long by 10 m wide by 20 m deep, that is referred to in reports as an "Open Cut", but it has no ramp. It is likely that this connects with the underground workings. The hole has not been backfilled or fenced, but has been surrounded by an earthen bund approximately 0.7 m high. Previous explorers stored diamond drill core from district-wide exploration programs in a large shed near Rising Sun. The shed has been removed, but the concrete floor pad and two other smaller ones are still present.

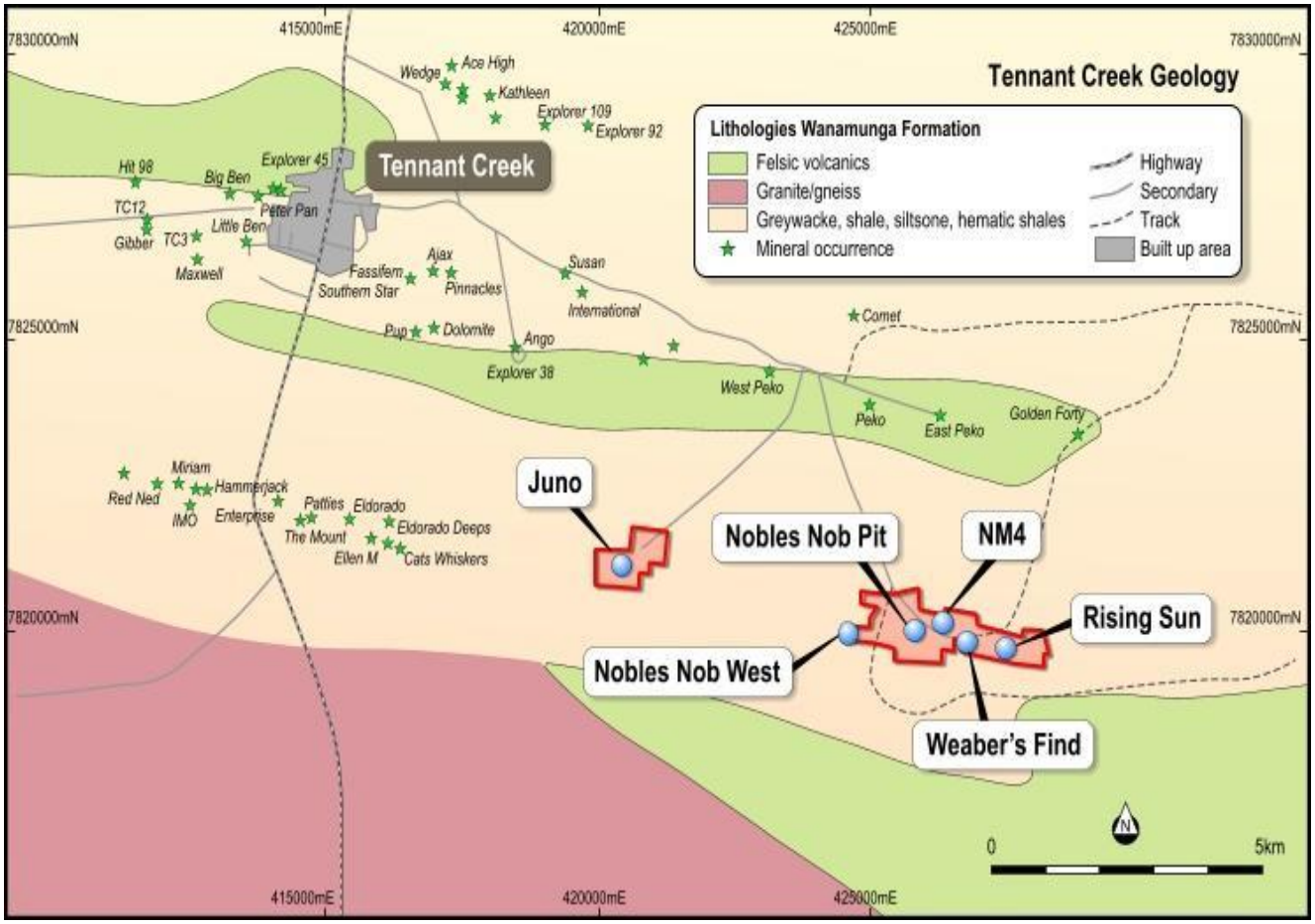


Figure 4: Mine Deposits in the Vicinity of Nobles Nob and Juno Projects

Table 11: Previous Disturbance and Rehabilitation Status of Historical Mine Activities

Site	Disturbance	Rehabilitation Status	Further Rehabilitation Activities Required
Juno	Buildings	Buildings dismantled and removed from site	Concrete foundations to be removed or buried
	Headframe	Headframe removed from site.	Headframe concrete footings remain and are to be removed or buried
	Surface disturbance	Rehabilitation has been conducted	Monitor regrowth, seeding and weed management if required
Nobles Nob	Open pit	No rehabilitation conducted	Maintain fence and bunding around the open pit
	Tailings dams	Rehabilitation has been conducted	Monitor regrowth, seeding and weed management if required
	Surface disturbance	Ripping and rehabilitation of some areas has been conducted	Monitor regrowth, seeding and weed management if required
			Finalise rehabilitation of drill pads, collars, sumps and tracks.
Rising Sun West Other small underground mines	Open pit	Safety bund has been constructed	Post-mining land use to be determined and rehabilitation of the site to be progressed accordingly
	Buildings	Buildings dismantled and removed from site	Concrete foundations to be removed or buried
	Surface disturbance	Rehabilitation has been conducted	Monitor regrowth, seeding and weed management if required
	Surface disturbance	Rehabilitation has been conducted	Monitor regrowth, seeding and weed management if required

Table 12: Rehabilitation Planning

Disturbance	Rehabilitation Activities	Schedule (Timing)	Closure Objectives	Monitoring Techniques
Drill holes	Drill holes to be securely capped or plugged	Drill holes from new programs are to be capped with plastic plugs immediately on completion of hole.	All holes to be capped or plugged on completion of drilling program.	At the completion of each new drilling program, an audit is to be undertaken to record the location of all new holes. A follow-up audit is to be undertaken one month after the completion of the drilling program to ensure all drill holes identified in the first audit have been capped.
	All holes to be plugged to 40 cm below ground and capped in accordance with Advisory Note AA7-029	Drill holes from new programs are to be plugged and capped permanently within six months of completion of the program.	Within six months of completion of a drilling program, all holes will be capped to at least 40 cm below ground in accordance with Advisory Note AA7-029.	A follow-up audit of all new drill holes is to be undertaken six months after the completion of each drilling program to confirm all have been plugged and capped in accordance with Advisory Note AA7-029.
Drill pads	Drill pads to be smoothed and contoured/scarified to stabilise and reshape the site to as near original conditions as possible. Excavated earth and overburden to be raked back over the drill pad. Stockpiled topsoil and vegetation to be respread over the site.	Drill pads from new drill programs to undergo rehabilitation as soon as possible after completion of the program, or within six months of completion of the program.	Drill pads to undergo rehabilitation activities in accordance with Advisory Note AA7-029 within six months of completion of the drilling program.	A SOP for the rehabilitation of drill pads will be put together and include a checklist of rehabilitation requirements. Audits of drill pads are to be undertaken six months after the completion of each drilling program to confirm the required rehabilitation activities have been carried out.
Sumps	Backfill all sumps with excavated material. Cover sumps with topsoil/cleared vegetation. Rip sumps on the contour.	All sumps to be rehabilitated within six months of the completion of the drilling program	New sumps to be backfilled and ripped within six months of the completion of the drilling program.	A SOP for the rehabilitation of drill pads will include the requirements for the rehabilitation of sumps and include them in the checklist. Audits of sumps are to be undertaken six months after the completion of each drilling program to confirm the required rehabilitation activities have been carried out.
Costeans	Backfill all costeans with excavated material. Cover costeans with topsoil/cleared vegetation. Rip costeans on the contour.	All new costeans to be rehabilitated as soon as sampling/mapping has been completed and before the onset of the next wet season.	New costeans to be backfilled and ripped as soon as sampling/mapping has been completed and before the onset of the next wet season.	A SOP for the rehabilitation of costeans will be put together and include a checklist of rehabilitation requirements. Audits of costeans are to be undertaken six months after the completion of each drilling program to confirm the required rehabilitation activities have been carried out.

Disturbance	Rehabilitation Activities	Schedule (Timing)	Closure Objectives	Monitoring Techniques
Tracks / Grid lines	Back-grade windrows on access tracks. Remove any obstructions from creek beds. Rip tracks if they have become compacted or deeply rutted and topsoil significantly disturbed. Grid lines that have been cleared are to be closed off using cleared vegetation as a barrier. Scarify or contour grid lines if the surface has become compacted or degraded or in areas where the topsoil has been substantially disturbed	Rehabilitation of access tracks should be carried out prior to relinquishment of the exploration licence – unless otherwise requested by the land owner.	Scarification or contouring of access tracks at the relinquishment of the exploration licence.	A SOP for the rehabilitation of tracks and grid lines will be put together and include a checklist of rehabilitation requirements.
		Grid lines that have been cleared are to be closed off at the completion of the drilling program. Remove all grid pegs and survey markers prior to relinquishment of the exploration licence	Access to new grid lines closed off at the completion of the drilling programme. Scarification or contouring of grid lines.	Audits of grid lines are to be undertaken one month after the completion of each drilling program to confirm the required rehabilitation activities have been carried out.
Sample bags	All sample bags, grid pegs and artificial debris to be removed from site.	Sample bags and debris from new drilling programs are to be removed within six months of the completion of the drilling program.	Sample bags and debris from new drilling programs to be removed within six months of completion of the program.	A SOP for the rehabilitation of drill pads will include the removal of sample bags and debris within the rehabilitation requirements and associated checklist. Audits of sumps are to be undertaken six months after the completion of each drilling program to confirm the required rehabilitation activities have been carried out. Audit of site on completion of rehabilitation

6.1 EXPLORATION REHABILITATION REGISTER

Rehabilitation activities remaining to be completed on site are detailed in Table 13. These activities will be finalised during the upcoming drilling program planned for 2018.

Table 13: Rehabilitation Activities Remaining to be Completed on Site

Disturbance	Rehabilitation Activities	Schedule (Timing)	Closure Objectives / Targets	Monitoring Techniques
Drill holes	6	Upon completion of drilling program	Hole to be closed off & plugged to ensure no danger to personnel & fauna – refer DME Advisory Note AA7/029	Drill sites checked, photographic record established
Drill pads	5	Upon completion of drilling program	Pad rehabilitated to suit surrounding area – refer DME Advisory Note AA7/029	Drill sites checked, photographic record established
Sumps	5	Upon completion of drilling program	Sump rehabilitated to suit surrounding area – refer DME Advisory Note AA7/029	Drill sites checked, photographic record established
Costeans	0			
Bulk sample pits	0			
Tracks / Gridlines	Existing tracks used. Tracks created specifically for drill pads to be rehabilitated on closure of the drill pad.			
Sample bags	All bags removed to local tip	After Assay Results are received	Area to be free of rubbish and foreign objects	Drill sites checked, photographic record established
Camp	All Tennant Gold staff, drilling teams and contractors are housed in Tennant Creek.			

DEPARTMENT OF PRIMARY INDUSTRY AND RESOURCES

https://nt.gov.au/m
energy

AF7-014		last review: September 2012

M & E Security Calculation Tool
Exploration Operations

"OPERATOR"

Security Calculation Summary

[redacted]

TOTAL COST	**$50,245.80**
10% Discount	**$5,025**
Amended amount	**$45,221**
1% levy	**$452**

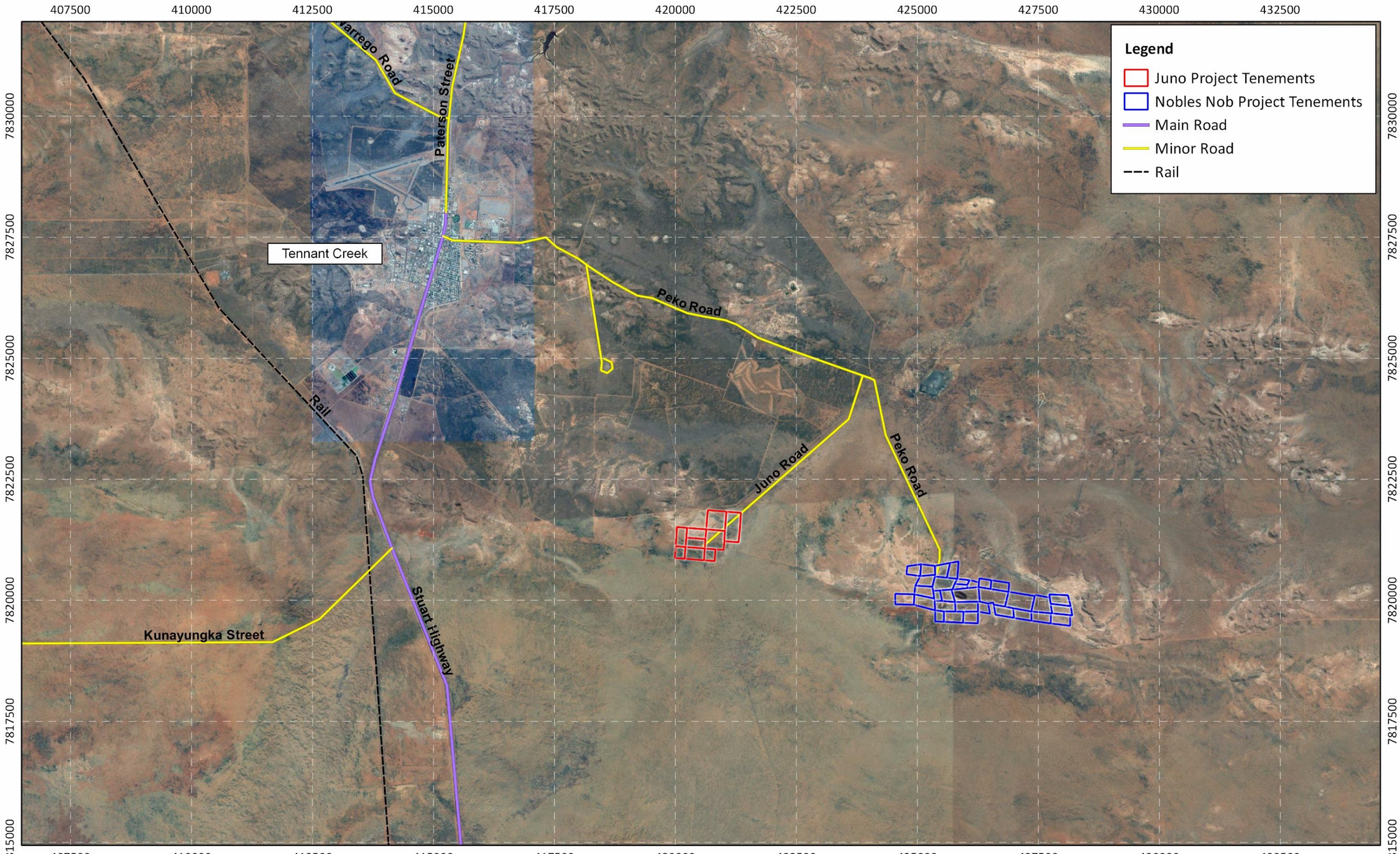
REFERENCES

Tennant Gold Resources (2018). *Tennant Creek Project 2018 Mining Management Plan 2018.* Prepared for the Department of Mines and Energy, Northern Territory Government.

EcoScience NT. (2010). *Flora Survey, Excalibur Mining, Tennant Creek Project. Final Report August 2010.* Unpublished report prepared for Coffey Environments and Excalibur Mining Corporation Limited.

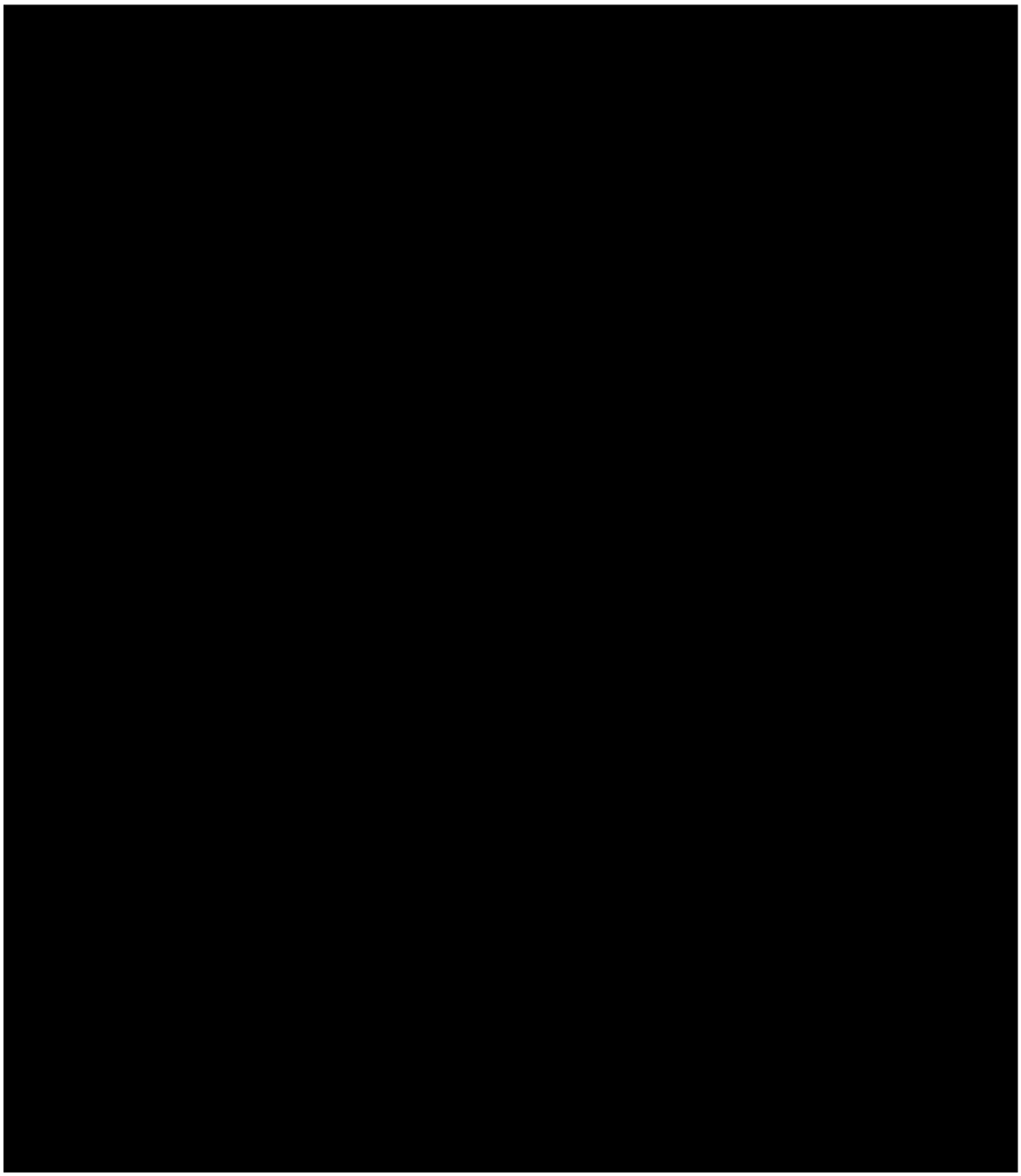
Excalibur Mining Corporation Limited [Excalibur]. (2012). *Tennant Creek Project Amended Mining Management Plan 2012.* Prepared for the Department of Mines and Energy, Northern Territory Government.

FaunaAssess Wildlife Survey. (2010). *Tennant Creek Project Baseline Fauna Survey, Final Report September 2010.* Unpublished report prepared for Coffey Environments and Excalibur Mining Corporation Limited.



Author: Bridget Watkins	Project Name:	**Figure 1**	0 1.75 3.5	Figure Num: 1	MMWC Environmental PTY LTD
Drawn: Lewis Trotter		**Regional Location of the Tennant Creek Projects - Nobles Nob and Juno**	Kilometres	Scale: 1:30,000	ENVIRONMENTAL MANAGEMENT & OUTCOMES FOR MINING & DEVELOPMENT
Client: Excalibur Mining	**Tennant Creek - Nobles Nob & Juno**		N — Grid based on UTM Projection GDA 1994 MGA Zone 53	Date: 22/04/2016	
				Page Size: A3	

APPENDIX A AND APPENDIX B – 2016 Photographs from Nobles Nob and Juno



APPENDIX C – Rubber Bush Management Plan

(all details from Northern Territory Department of Land Resource Management Rubber Bush Fact Sheet)

Rubber bush (**Calotropis procera*) is a Declared Class B (growth and spread to be controlled) and Class C (not to be introduced into the Territory) weed in accordance with the *Weeds Management Act*. Rubber bush can cause the following problems by forming dense clumps: smother native plants, degrade grassland, block stock access to water points, hinder mustering ability, reduce pasture grass coverage by shading, and affect the natural environment and pastoral productivity. The stems, leaves and flowers produce a white sap that can be toxic if ingested by some animals and can cause skin irritation in people after direct skin contact.
Rubber bush is native to parts of Africa, the Middle East and south Asia. It is well adapted to arid and semi-arid environments and can also tolerate monsoonal environments. It is salt tolerant and grows quickly in open, cleared or disturbed areas. Seeds are primarily dispersed by wind, but can also become attached to animals, clothing and vehicles.

Preventing and Controlling Rubber Bush Spread
Spread of Rubber bush can be reduced by checking and washing down vehicles before moving to uninfested areas, checking clothes for seed and removing single plants immediately when detected. A range of chemical and mechanical control options are suitable for dealing with Rubber bush depending on the density, size and habitat of the infestation.

Non chemical control
Rubber bush has a deep tap root and an ability to re-sprout from lateral roots, therefore mechanical control at ground level will not work. Cutting the root system 10-20 cm below ground which removes the lateral roots is intensive, but more effective. Follow up control of seedlings is required and can effectively reduce rubber bush infestations as seeds do not have a dormancy mechanism and generally do not survive more than two years, provided there is no new individual growth. Blade ploughing or stick-raking can be effective if the root layer is removed from the soil.

It is vital that follow up works are conducted in order to control seedling recruitment and regrowth after an infestation has been treated. If left untreated, seedlings and regrowth are likely to develop into a bigger problem than the initial infestation. Cultivation of pasture or native vegetation after mechanical control will help to prevent re-sprouting and seedling establishment.
Control should preferentially be undertaken prior to seed drop to avoid spread. Fire is not recommended as a control option for rubber bush as it vigorously re-sprouts after being burnt.

Chemical control

Herbicide can be used to control rubber bush. Foliar spraying is best undertaken when plants are actively growing and thorough coverage is required otherwise plants will reshoot. Plants may go dormant during extended dry periods and herbicide uptake during these times is greatly reduced, decreasing kill rates. Treatment is generally more effective on plants less than 2 m rather than mature adult plants. Granular soil applied herbicides (eg.Graslan®) can vary in effectiveness depending on soil type. Basal bark and cut stump control options are effective most of the year round. Current chemical control recommendations are presented in the table below.

Chemical and concentration	Rate	Situation, method and comments
Triclopyr (200 g/L) and Picloram (100 g/L) Eg. Tordon DS™ **+ Aminopyralid (8 g/L)** Eg. Grazon Extra™	500ml / 100L water 500-750mL / 100L water	Foliar spray. Check label for recommended adjuvant product. More effective on plants <2m than on dense mature adult plants as thorough coverage on all leaves is required.
Triclopyr (240 g/L) and Picloram (120 g/L) Eg. Access™	1L / 60L diesel	Basal bark application for plants with stems up to 5cm diameter. Important to spray all stems of plant. Spray from ground level to 30-40cms, thoroughly soaking stems to point of runoff. Cut stump method for plants with stems greater than 5cm diameter. Cut close to ground level as possible (eg less than 15cm from ground). Immediately apply herbicide mixture to cut surface and remaining bark.
2,4-D amine (625 g/L) Various products	800mL /100L water	Foliar spray when actively growing. Wetting agent required. For plants up to 2m.
Tebuthiuron (200g/kg) Eg. Graslan™	1g / m²	Application to black clay soils in conjunction with seasonal rainfall provides the most effective response. Spread granules according to density of the infestation.
Fluroxypyr (333 g/L) Eg. Starane™ Advanced	3L / 100L diesel	Cut stump method for plants with stems up to 10cm diameter and up to 3m high. Cut close to ground level as possible (eg less than 15cm from ground). Immediately apply herbicide mixture to cut surface and remaining bark.

Optimum treatment times are indicated in the table below.

Optimum treatment times – darker colours represent preferred treatment months.												
Soil applied granules	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cut stumping	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Basal barking	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Foliar spraying	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Additional information on weed management planning, integrated control, herbicide application techniques and monitoring can be obtained from www.nt.gov.au/weeds or by contacting the Weed Management Branch at weedinfo@nt.gov.au or on 8999 4567. (Dept. of Land Resource Management).

Management Methods for Rubber Bush at Nobles Nob

The population of Rubber Bush at Nobles Nob was assessed during a site visit conducted in April 2016. Approximately 20 individuals of Rubber Bush growing from 0.5 - 3 m were recorded in a single area on the south side of the existing open pit, on MLC539 (Figure 2, Plate 22 and Plate 23).

The method of control proposed to remove the Rubber Bush population from the Nobles Nob project tenements is the cut stump herbicide treatment. Cut stump herbicide treatment is suitable for plants with stem diameters of above 5 cm at the base, which represents the majority of the individuals present at Nobles Nob. The plant stems will be cut off horizontally as close to the ground as possible, and the exposed stump will immediately be sprayed liberally with the herbicide mixture (Starane Advanced mixed with diesel).

The proposed timeframe for treatment of the Rubber Bush population at Nobles Nob is by the end of May 2017 (during the proposed April/May 2017 drilling program). All individuals in the population will be removed during this treatment period. The removal will be conducted by Tennant Gold staff or by employed contractors. A recorded count of all removed plants will be maintained and photographs will be taken before and after removal. The area where the population has been recorded will be thoroughly searched on foot to ensure all individuals are removed. All Rubber Bush individuals within the population will be marked by GPS to allow accurate return assessment of the entire population area.

Return assessments of the population to assess for any regrowth or new individuals will be conducted annually at approximately the same time as the original removal, unless a site visit had already been conducted in the 8 months previous in which case staff would assess the Rubber Bush population location then. Equipment and herbicide will be stored at the Tennant Gold property in Tennant Creek. As such, it will be readily accessible to Tennant Gold staff to conduct further treatment of any Rubber Bush regrowth on site. Return assessments will be conducted annually until two consecutive assessments present no regrowth or new Rubber Bush plants. Following that period, review assessments of the population will be conducted in conjunction with any site visits.

The following datasheet will be used to record details during the Rubber Bush removal.

Individual Number	Date	Datum & Zone	Easting	Northing	Height	Diameter of stem at base	Photo
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

APPENDIX D – Flora Species List

FAMILY	GENUS & SPECIES	COMMON NAME	Lifeform	Perreniality	Conservation Status (NT)	Conservation Status (Comm)	Endemic	Exotic	Dry season	Wet season
ACANTHACEAE	*Rostellularia adscendens*		fo	r	lc					•
AMARANTHACEAE	*Achyranthes aspera*		fo	a	lc					•
	Alternanthera angustifolia var. *lanata*		fo	a	lc					•
	Alternanthera nana		fo	a	lc				•	
	Amaranthus cochleitepalus		fo	a	lc					•
	Gomphrena lanata		fo	a	lc					•
	Maireana georgei	Mountain Bluebush	sh	p	lc				•	
	Ptilotus calostachyus		fo	r	lc				•	
	Ptilotus exaltatus	Mulla mulla	fo	p.r	lc				•	
	Ptilotus macrocephalus		sh fo	r	lc					•
	Salsola tragus		sh fo	a	lc				•	
	Sclerolaena cornishiana		fo	a.p	lc				•	
APOCYNACEAE	*Carissa lanceolata*	Conkerberry	sh	p	lc				•	
ASCLEPIDACEAE	**Calotropis procera*		sh	f				B		•
	Marsdenia australis		vnw	F	lc				•	•
	Sarcostemma viminale subsp. *australe*		sh.fo v	p	lc					•
ASTERACEAE	*Centipeda minima* subsp. *minima*		fo	a	lc					•
	Pluchea ferdinandi-muelleri		sh.fo	p	lc				•	•
	Pterocaulon serrulatum		sh.fo	a.p	lc				•	•
	Pterocaulon sphacelatum		sh.fo	a.p	lc				•	
	Sphaeromorphaea australis		fo	a.p	lc					•
	**Tridax procumbens*		fo	p				N		•
AIZOACEAE	*Trianthema triquetra*		fo	a	lc					•
BORAGINACEAE	*Ehretia saligna*	Coonta, Peachwood	sh.tr	p	ne				•	•
	Heliotropium ? cunninghamii		sh.fo	a	lc					•
	Heliotropium haesum	Native Heliotrope	sh.fo	a.p	lc				•	
	Heliotropium skeleton		sh.fo	p	lc					•
	Heliotropium ovalifolium		sh.fo	a.p	lc					•
	Trichodesma zeylanicum var. *zeylanicum*		sh fo	r	lc					•
CAPPARACEAE	*Capparis lasiantha*	Split Jack, Wait-A-While	sh.vnw	p	lc				•	•
	Capparis loranthifolia		tr sh	p	lc				•	•
	Capparis umbonata	Wild Orange	tr.sh	p	lc				•	•
CAESALPINIACEAE	**Parkinsonia aculeata*	Parkinsonia	sh	p				B	•	•
	Senna glutinosa subsp. *glutinosa*		sh	p	lc					•
	Senna notabilis		sh	a p	lc					•
CHENOPODIACEAE	*Maireana villosa*		sh	p	lc					•
CLEOMACEAE	**Cleome viscosa*	Tickweed	fo	a	lc			N	•	•
CONVOLVULACEAE	*Bonamia pannosa*		fo	r	lc					•
	Evolvulus alsinoides var. *decumbens*		fo	r	lc				•	
	Evolvulus alsinoides var. *villosicalyx*		fo	r	lc					•
	Ipomoea polymorpha		fo	a r	lc					•
CUCURBITACEAE	*Cucumis maderaspatanus*									
CYPERACEAE	*Cyperus betchei* subsp. *commiscens*		se	p	lc				•	
	Cyperus squarrosus		se	a	lc					•
	Eleocharis atropurpurea		se	a	lc					•
	Fimbristylis dichotoma		se	p	lc				•	
	Fimbristylis simulans		se	a	lc					•
	Schoenoplectus laevis		se	a	lc					•
EUPHORBIACEAE	*Euphorbia biconvexa*		sh.fo	r	lc					•
	Euphorbia drummondii		fo	a p r	lc					
	Euphorbia tannensis		sh fo	p	lc					•
	Phyllanthus sp. Broad tuberculate seeds (B.G.Thomson 2370)									
FABACEAE	*Indigofera linnaei*		sh.fo	r	lc				•	
	Acacia adsurgens		tr.sh	p	lc				•	•
	Acacia ancistrocarpa		sh	p	lc				•	•
	Acacia aneura var. *Tenuis*	Mulga	tr	p	lc				•	

FAMILY	GENUS & SPECIES	COMMON NAME	Lifeform	Perreniality	Conservation Status (NT)	Conservation Status (Comm)	Endemic	Exotic	Dry season	Wet season
FABACEAE cont.	*Acacia bivenosa*		sh	p	lc				•	•
	Acacia sp. prob *colei*		sh	p	lc				•	•
	Acacia cowleana		tr.sh	p	lc				•	
	Acacia elachantha		sh	p	lc				•	•
	Acacia estrophiolata		tr	p	lc					•
	Acacia hilliana	Hill's Tabletop Wattle	sh	p	lc				•	•
	Acacia lysiphloia	Turpentine	sh	p	lc				•	•
	Acacia melleodora		sh	p	lc				•	•
	Acacia monticola	Red Wattle	tr.sh	p	lc				•	•
	Acacia sericophylla		tr.sh	p	lc				•	•
	Acacia sp.									•
	Acacia tenuissima	Narrow-Leaved Wattle	sh	p	lc				•	•
	Crotalaria medicaginea		sh fo	a p	lc					•
	Crotalaria montana		sh fo	a	lc					•
	Dichrostachys spicata	Chinese Lantern	tr.sh	p	lc				•	
	Galactia tenuiflora		vnh	r	lc				•	•
	Indigofera colutea		fo	a p	lc					•
	Indigofera linnaei		sh fo	r	lc					•
	Indigofera linifolia		fo	a	lc					•
FABACEAE cont.	*Mirbelia viminalis*		sh	p	lc				•	
	Petalostylis cassioides		sh	p	lc				•	
	Rhynchosia minima		vnh	r	lc					•
	Senna artemisioides subsp. *oligophylla*	Limestone Cassia	sh	p	lc				•	•
	Senna artemisoides subsp. *alicia*		sh	p	lc				•	•
	Senna artemisoides subsp. *filifolia*		sh	p	lc				•	•
	Senna artemisoides subsp. *quadrifolia*		sh	p	lc				•	•
	Senna artemisoides subsp. *symonii*		sh	p	dd				•	•
	Senna glutinosa subsp. *glutinosa*	Silver Cassia	sh	p	lc				•	•
	Senna oligoclada		sh	p	lc					•
	**Stylosanthes hamata*		fo	p				N		•
	Tephrosia simplicifolia		sh fo	p r	lc					•
	Tephrosia s p. Willowra		sh fo	a	lc					•
	Tephrosia stuartii		sh fo	r	lc					•
	Vigna lanceolata var. *latifolia*		vnh	r	lc					•
	Zornia albiflora		fo	r	lc					•
GOODENIACEAE	*Goodenia heterochila*		fo	p	lc				•	•
	Goodenia prob. *lamprosperma*		fo	r	lc					•
	Goodenia lunata		fo	a	lc					•
GOODENIACEAE cont.	*Goodenia ramellii*		fo	pf	lc				•	
	Goodenia triodiophila		fo	a	lc					•
LAURACEAE	*Cassytha capillaris*		vnh.pr	p	lc					•
LILIACEAE	*Iphigenia indica*		fo	r	lc					•
LORANTHACEAE	*Amyema maidenii*		sh.pb	p	lc				•	
	Lysiana spathulata		sh.pb	p	lc				•	
LYTHRACEAE	*?Rotala diandra*		fo	r	lc					•
MALVACEAE	*Abutilon fraseri*		sh.fo	a	lc					•
	Abutilon macrum		sh.fo	a	lc					•
	Gossypium australe	Rose Cottonbush, Native	sh	p	lc				•	•
	Gossypium bickii		sh	p	lc				•	
	Hibiscus sturtii	Sturts Desert Rose	sh	a	lc				•	
	Melhania oblongifolia		sh	r	lc				•	
	**Sida cordifolia*		sh.fo	p.r				B		•
	Sida fibulifera	Pin Sida, Silver Sida	sh.fo	p.r	lc				•	•
	Sida filiformis		sh.fo	p.r	lc					•
	Sida sp. Suplejack Station		sh.fo	r	lc					•
	Waltheria indica		sh.fo	a.p	lc				•	•
	Owenia acidula	Emu Apple	tr	p	lc				•	•

FAMILY	GENUS & SPECIES	COMMON NAME	Lifeform	Perreniality	Conservation Status (NT)	Conservation Status (Comm)	Endemic	Exotic	Dry season	Wet season
MYRTACEAE	*Corymbia aparrerinja*		tr	f	lc				•	•
	Corymbia flavescens		tr	f	lc				•	•
	Corymbia opaca		tr	p	lc				•	•
	Eucalyptus camadulensis	River Red Gum	tr	p					•	•
	Eucalyptus leucophloia subsp. *euroa*	Snappy Gum	tr	p	lc				•	•
	Eucalyptus odontocarpa		sh	p	lc				•	•
	Eucalyptus pruinosa		tr	p	lc				•	•
	Eucalyptus sp.		tr	p						•
	Eucalyptus victrix		tr	p	lc				•	•
	Melaleuca lasiandra		sh	p	lc				•	•
	Melaleuca viridflora	Broad-leaved Paperbark	tr	p	lc				•	•
NYCTAGINACEAE	*Boerhavia coccinea*		fo	a p	lc					•
	Boerhavia repleta		fo	a p	lc					•
OLEACEAE	*Jasminum calcareum*	Native Jasmine	sh.vnw	p	lc				•	•
PHYLLANTHACEAE	*Flueggea virosa* subsp. *melanthesoides*		tr.sh	o	lc				•	
PORTULACACEAE	*Portulaca filifolia* (R.A.Perry 3267)		fo	a r	lc					•
	Portulaca oleracea var. Undoolya		fo	a	lc					•
POACEAE	*Aristida* sp.		gr	a					•	
	Aristida holathera		gr	a						•
POACEAE Cont.	*Aristida inaequiglumis*		gr	p	lc					•
	Bothriochloa ewartiana		gr	p	lc				•	•
	Brachyachne nsp.		gr	a	ne					•
	**Cenchrus ciliaris*	Buffel Grass	gr	p				N	•	•
	**Chloris virgata*		gr	a				N		•
	Chrysopogon fallax		gr	a	lc				•	•
	Cymbopogon bombycinus	Native Lemongrass	gr	p	lc				•	•
	Dactyloctenium radulans	Button Grass	gr	a	lc				•	•
	Digitaria brownii		gr	p	lc				•	•
	**Echinochloa colonum*		gr	a				N		•
	Elytrophorus spicatus		gr	a	lc					•
	Enneapogon clelandii		gr	p	lc				•	
	Enneapogon polyphyllus		gr	a p	lc					•
	Enteropogon sp.		gr	p						•
	Eragrostis cumingii	Cuming's Lovegrass	gr	a	lc				•	•
	Eragrostis desertorum		gr	p	lc				•	
	Eragrostis leptocarpa		gr	a p	lc					•
	Eriachne ciliata		gr	a	lc					•
	Eriachne mucronata		gr	r	lc				•	•
POACEAE Cont.	*Eriachne pulchella*		gr	r	lc				•	
	Eulalia aurea	Silky Browntop	gr	p	lc				•	
	Mnesithea formosa		gr	a	lc					•
	Paraneurachne muelleri		gr	p	lc					•
	Panicum decompositum		gr	p	lc					•
	Paspalidium rarum		gr	a	lc					•
	Pevotis rara		gr	a	lc					•
	Sporobolus australasicus		gr	a p	lc					•
	Setaria surgens		gr	a	lc					•
	Tragus australianus									
	Triodia longiceps	Spinifex	gr	p	lc				•	•
	Triodia pungens	Spinifex	gr	p	lc				•	•
	Urochloa holosericea subsp. *velutina*		gr	a	lc					•
POLYGALACEAE	*Polygala* sp.		fo	a						•
	Polygala sp. Davenport Ranges		fo	a	lc					•
PROTECEAE	*Grevillea striata*	Beefwood	tr.sh	p	lc				•	•
	Grevillea wickhamii subsp. *aprica*	Holly-leaved Grevillea	sh	p	lc				•	•
RHAMNACEAE	*Ventilago viminalis*	Vine Tree, Supplejack	tr.sh	p	lc				•	•
SANTALACEAE	*Santalum lanceolatum*	Sandalwood	tr.sh.pr	p	lc				•	•

FAMILY	GENUS & SPECIES	COMMON NAME	Lifeform	Perreniality	Conservation Status (NT)	Conservation Status (Comm)	Endemic	Exotic	Dry season	Wet season
SAPINDACEAE	*Atalaya hemiglauca*	Whitewood	tr	p	lc				•	•
	Dodonaea coriacea	Hopbush	sh	p	lc				•	•
SCROPHULARIACEAE	*Eremophila longifolia*	Dogwood	sh	p	lc				•	•
	Peplidium muelleri		fo	r	lc					•
SOLANACEAE	*Solanum quadriloculatum*	Wild Tomato	sh	p	lc				•	
STERCULIACEAE	*Keraudrenia nephrosperma*		sh	p	lc					•
SURINACEAE	*Stylobasium spathulatum*		sh	p.r	lc				•	
TILIACEAE	*Corchorus pumilio*		sh f	a	lc					•
ZYGOPHYLLACEAE	*Tribulopis angustifolia*		fo	a r	lc					•

KEY TO ABBREVIATIONS IN PLANT SPECIES LIST

LIFEFORMS

lifeform	explanation
fn	Fern
fo	Forb (herbaceous, not a grass or sedge)
gr	Grass
pm	Palm
se	Sedge
sh	Shrub
sh.fo	Subshrub
sh.vnw	Shrubby vine
tr	Tree
tr.sh	Tree or shrub
vn	Vine
vnh	Herbaceous vine
vnh.pr	Herbaceous vine, root parasite
vnw	Woody vine

LIFE CYCLE

r	annual aerial parts, root perennial
a	true annual
a.r	'a' or 'r'
p	perennial aerial parts, evergreen
p.r	'p' or 'r'
a.p	'a' or 'p'
o	obligate deciduous
f	falcultative deciduous

CONSERVATION STATUS

lc	least concern
v	vulnerable
ne	not evaluated
upper case = endemic	

APPENDIX E - Environmental Policy

COMMITMENT

Tennant Gold Pty Ltd (Tennant Gold) understands that responsible environmental management has a positive impact on the Company's success and sustainability. Hazard analysis, monitoring and auditing, and inspections are used to continuously improve procedures and practices. Tennant Gold recognises that suitable Environmental Policy and Health & Safety Policy provide a structured framework for effective environmental and safety practice across all of the Company's activities.

GOALS & OBJECTIVES

Tennant Gold is committed to positive environmental management outcomes and will use reliable management systems to maintain and enhance performance, including:

- Planning ahead of the commencement of work programs to minimize, or if possible, eliminate any adverse impact on the environment.
- Selection of employees and contractors who demonstrate an awareness and commitment in environmental management and performance, and ensure that we have the necessary resources and skills to achieve our environmental commitments.
- Collaboration with local communities to identify concerns, aspirations and any opportunities for improvement.
- Promotion of respectful dialogue between employees and contractors to enhance the shared ownership of environmental performance outcomes.
- Implementation and maintenance of a protocol for exploring on Aboriginal land which identifies, assesses and effectively controls any risk to the environment.
- Provision of training and information to enable employees and contractors to work in a responsible and respectful manner.
- Compliance with all applicable environmental legal and regulatory requirements as a minimum standard.

PROTOCOL – ABORIGINAL LANDS

Tennant Gold respects the traditions and cultures of indigenous people and recognises the unique relationship that indigenous people have to the land. Tennant Gold believes that effective management of indigenous matters forms an integral part of successful operations.

RESPONSIBILITIES

Tennant Gold's principles in dealing with indigenous people are:

- The building of trust and respect;
- Respect for human and property rights, and sites of cultural or religious significance;
- A clear and concise approach to negotiations with landowners;
- Adherence to acceptable protocols and meeting procedures that are endorsed by indigenous people;
- Identification and implementation of commercial enterprises, employment and career development opportunities as appropriate to the work at hand.

COMMITMENT

To achieve these objectives Tennant Gold will undertake to:

- Appoint a senior person responsible for coordinating all aspects of managing indigenous issues.
- Monitor and respond to new developments in law and thinking on relevant matters impacting of their activities.

Tennant Gold, as a minimum, will comply with laws and regulations relating to indigenous people in the states in which it operates.

GENERAL

Aboriginal Liaison

- Ensure that the concerns and requirements of Traditional Owners are established and respected in relation to their use and management of the land.

Sites of Special Significance

- Ensure that sites of special significance are not disturbed and that, where exploration activities are proposed in a sensitive area, they are carried out after the conduct of searches at the Sacred Sites Authority and following consultation with Traditional Owners.

Aboriginal Relations

- Ensure that employees and contractors respect the privacy and well being of the Traditional Owners.
- Ensure that sites of significance to Aboriginals are respected and not disturbed.
- Ensure water is taken only from designated areas and sources.
- Ensure all improvements are left undisturbed.
- Ensure disturbance to wildlife and other animals is kept to a minimum.
- Ensure fire restrictions are observed and appropriate fire fighting equipment maintained on drill and support equipment.
- Ensure due courtesy and respect is given to Traditional Owners, local inhabitants and any other land user.

Personnel

- Ensure that the above rules apply equally to Company personnel and contractor personnel.

Reporting

- Ensure all environmental hazards, incidents and near misses are reported using the Hazard/Incident Reporting system.
- Report all serious environmental incidents to the statutory authorities.

ACCESS

General

- Ensure that the route finally selected to obtain access to the region is satisfactory in terms of environmental and Aboriginal concerns.

Construction of New Tracks

- Ensure the location and, if necessary, the construction of new tracks is carried out after consultation with the Traditional Owners.
- Ensure that clearing for tracks is kept to a minimum and, where possible, grass cover and root systems are left undisturbed.
- Ensure shade trees and other trees used for the harvesting of food or natural resources are not removed when constructing new tracks.
- Ensure, where practicable, tracks are constructed on flat ground along watershed boundaries where run-off will be least.
- Ensure that as little of the top soil as possible is disturbed when forming tracks.
- Ensure tracks are formed in order to reduce the potential effects of gully erosion.
- Ensure a minimum number of tracks are constructed (in most cases infrequent overland use of four-wheel drive vehicles will cause less soil erosion and environmental disturbance than frequent use of tracks).

Creek Crossings

- Ensure suitable crossing points are selected (usually on straight channel reaches where the bank angle is least) to minimise the need for earthworks and disturbance to the banks and creek beds.
- Ensure the crossing does not disturb water flow or cause ponding.
- Ensure creek crossing points are properly maintained so as not to cause erosion or bank instability.

Track Maintenance

- Ensure that likely run-off from tracks is dispersed to avoid gully erosion.

On-site Vehicle Use

- Ensure that vehicular use is restricted to designated areas and tracks.
- Ensure vehicle speeds are safe and do not cause concern to other land users.

EXPLORATION

Ground and Airborne Surveys

- Ensure all land owners are notified of proposals for aerial surveys prior to being undertaken.

Drilling Operations

- Ensure movement of equipment between drill sites involves minimal clearing and track work.
- Ensure operations are carried out in a safe and efficient manner.
- Ensure, where access is required to environmentally sensitive areas, they are carried out after consultation with the Traditional Owners.
- Ensure drill sites are limited to the minimum area required.
- Ensure coarse drill cuttings are contained in a suitably constructed sump or, if necessary, an above ground tank.
- Ensure that, when flowing ground water is encountered during drilling operations, it is sampled, analysed and capped if required by the Traditional Owners for use as a future source of water supply.
- Ensure drill holes are sealed where necessary to avoid potential contamination of groundwater sources.
- Ensure drill sites are left free from rubbish.
- Ensure all sumps are backfilled and the site rehabilitated.
- Ensure drill sites are rehabilitated.
- Ensure minimum clearance of vegetation when moving between sites along a drill grid line.

Water Supply

- Ensure water supply for drilling operations is only taken from sources determined following consultation with Land Owners.
- Ensure water is conserved by recirculation through a collection sump (or if advisable an above ground tank).

MISCELLANEOUS

Fire Control

- Ensure every precaution is taken in respect of fire safety.
- Ensure that adequate fire fighting equipment is available on site before exploration works begin.

Emissions

- Ensure drilling equipment, mobile equipment and fixed plant are fitted with regulation emission and noise suppression equipment.

Rehabilitation

- Ensure, where possible, disturbed areas are rehabilitated to their prior condition.
- A Drill hole rehabilitation Log will be recorded for each site to document compliance.

Habitat Protection

- Ensure minimal disturbance in sensitive habitat areas and that vegetation used for food and natural resources is not disturbed.
- Ensure if access is required to sensitive areas that work is carried out only after consultation with Traditional Owners.

APPENDIX F - Environmental Reporting Guidelines

In accordance with section 29 of the *Mining Management Act* (MMA) operators are required to report an environmental incident or serious environmental incident:

(1) As soon as practicable after the operator for a mining site becomes aware of the occurrence of an environmental incident or serious environmental incident on the site, the operator must notify the Chief Executive Officer of the occurrence.

Maximum penalty: 200 penalty units.

Section 29 of the Act also states:

(2) An operator who gives notice orally must, as soon as practicable after doing so, give a written notice to the Chief Executive Officer.

Maximum penalty: 200 penalty units.

(3) An offence against subsection (1) or (2) is an offence of strict liability.

In order to assist operators in meeting their incident reporting obligations under section 29, the Department of Resources has developed this draft guideline set out on the following pages. The draft guideline may be formally issued by the Minister under section 47 of the MMA at some time in the future.

Operators should also be aware of section 33 of the MMA, which will apply from 1 July 2012, which states:

(1) A person commits an offence if:

(a) the person releases waste or a contaminant that is from a mining site; and

(b) the release is not authorised by the mining management plan for the site.

Maximum penalty: 200 penalty units.

(2) An offence against subsection (1) is an offence of strict liability.

(3) It is a defence to a prosecution for an offence against subsection (1) if the defendant establishes a reasonable excuse.

(4) Subsection (1) applies regardless of whether the release:

(a) occurs on or outside the mining site; or

(b) causes, or has the potential to cause, environmental harm.

"Environment" is defined under section 4 of the MMA as follows:

land, air, water, organisms and ecosystems on a mining site and includes:

(a) the well-being of humans;

(b) structures made or modified by humans;

(c) the amenity values of the site; and

(d) economic, cultural and social conditions.

When assessing an incident and making decisions about reporting on an environmental incident or serious environmental incident an operator should have regard to the definition of "environment" in the MMA.

Operators should conduct an appropriate assessment of the incident in order to determine the severity of the incident and whether the operator will be required to report the incident to the Chief Executive Officer of the Department of Resources.

For the purpose of classifying the severity of an incident and determining whether a report is required an operator may be **guided** by the following assessment matrix.

If it is possible to identify any one or more of the aspects of an incident set out within a severity class the operator should consider taking the appropriate actions for that class.

If an incident fits within the descriptions contained in different classes of severity, the operator should classify the incident by the highest level observed.

The following matrix is provided as a guide only. Operators should also have regard to the obligations set out in section 16 of the MMA, the conditions of authorisation, the permitted activities and the relevant procedures contained in the operator's own management plan, including its associated systems.

If an operator is in doubt about whether a report is required then the operator should contact the Director of Mining Performance for further guidance