DEPARTMENT OF **MINES AND ENERGY**

Report Cover Sheet

Tenure: EL30226

Title: EL30226 Dhupuma Plateau

Period: 11 August 2016 to 10 August 2017

Project Name: Dhupuma Plateau Mining Project

Title Holder: Gulkula Mining Company Pty Ltd

Title Operator: Gukula Mining Company Pty Ltd

Personal Author: J. Cameron and M. Annandale

Report Type: Annual Report

250K Mapsheet/s: SDS304 Gove, 6273 Gove – Northern Territory

100K Mapsheet/s: Standard NT 1:100 000 6273 and 1:250 000 map sheet

Geological Province: Carpentaria Basin

Stratigraphic Name: TBA

Keywords: Dhupuma Plateau Bauxite Mine

Commodity: Bauxite

Drilling: Yes

Geochem Sampling: Yes

Geophysics: Nil

Work Done: Environmental and Hydrology Studies on Dhupuma Plateau

Results: Studies to advance the Mine Management Plan (MMP) requirements including baseline data for the mining permitting of the Dhupuma Bauxite project.

Date: August 2016 – August 2017

Conclusions: Studies support low environmental impact of the project and Mine Planning Progressed

Contact Ken Kahler, Gulkula Mining

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Gulkula Mining Company Pty Ltd

ABN 21 153 861 806

Annual Report

For the Period 11 August 2016 to 10 August 2017

EL30226 Dhupuma Plateau

SD5304 Gove, Northern Territory

Exploration Report Number: 2017-0001

Target Commodity:	Bauxite
Tenement Holder:	Gulkula Mining Company Pty Ltd
Date:	August 2017
Author:	J. Cameron and M. Annandale
Submitted by:	Gulkula Mining Company Pty Ltd
Distribution:	NT DME (1)
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1 SUMMARY

Exploration Licence EL30226 (Dhupuma Plateau) held by Gulkula Mining Company Proprietary Limited (Gulkula Mining) is located on the Gove Peninsula in northeast Arnhem Land about 30km south of Nhulunbuy.

EL30226 was granted over an area of 68.55 km^2 (32 blocks). This land is administered under the Aboriginal Land Rights Act 1975 (ALRA).

The exploration target is bauxite mineralisation analogous to the Gove deposits currently being mined by Rio Tinto Alcan, and which have formed through the intensive weathering of Cretaceous sediments during the Tertiary.

During the reporting period no bauxite drilling programs were implemented, the exploration works focussed on studies to advance the Mine Management Plan (MMP) requirements for the mining permitting of the Dhupuma Bauxite project. The primary purpose of an MMP is to formalise the actions to be taken and strategies to be implemented, that combined, will manage impacts to the environment to acceptable and sustainable limits over both the short and long-term. In the reporting period this work included flora and fauna and hydrology and hydrogeology surveys, a Naturally Occurring Radioactive Materials (NORM) study and establishment of both a surface water monitoring program and groundwater monitoring bore drilling and installation program.

2 INTRODUCTION

This is the third annual report for EL30226 (Dhupuma Plateau) and has been prepared to present exploration activities undertaken during the period 11 August 2016 to 10 August 2017 for bauxite.

3 TENURE STATUS

Exploration Licence EL30226 (Dhupuma Plateau) was granted on 11/08/2014 to Gulkula Mining Company Pty Ltd for a period of 6 years. The project lies within North East Arnhem Land (Figure 1) which is subject to the Aboriginal Land Rights Act 1975 (ALRA).

Table 1: Tenement details

Tenement No.	Tenement Name	Ownership	Grant Date	Area Granted	Blocks
EL30226	Dhupuma Plateau	Gulkula Mining Company Pty Ltd.	11/08/2014	68.55 km^2	32

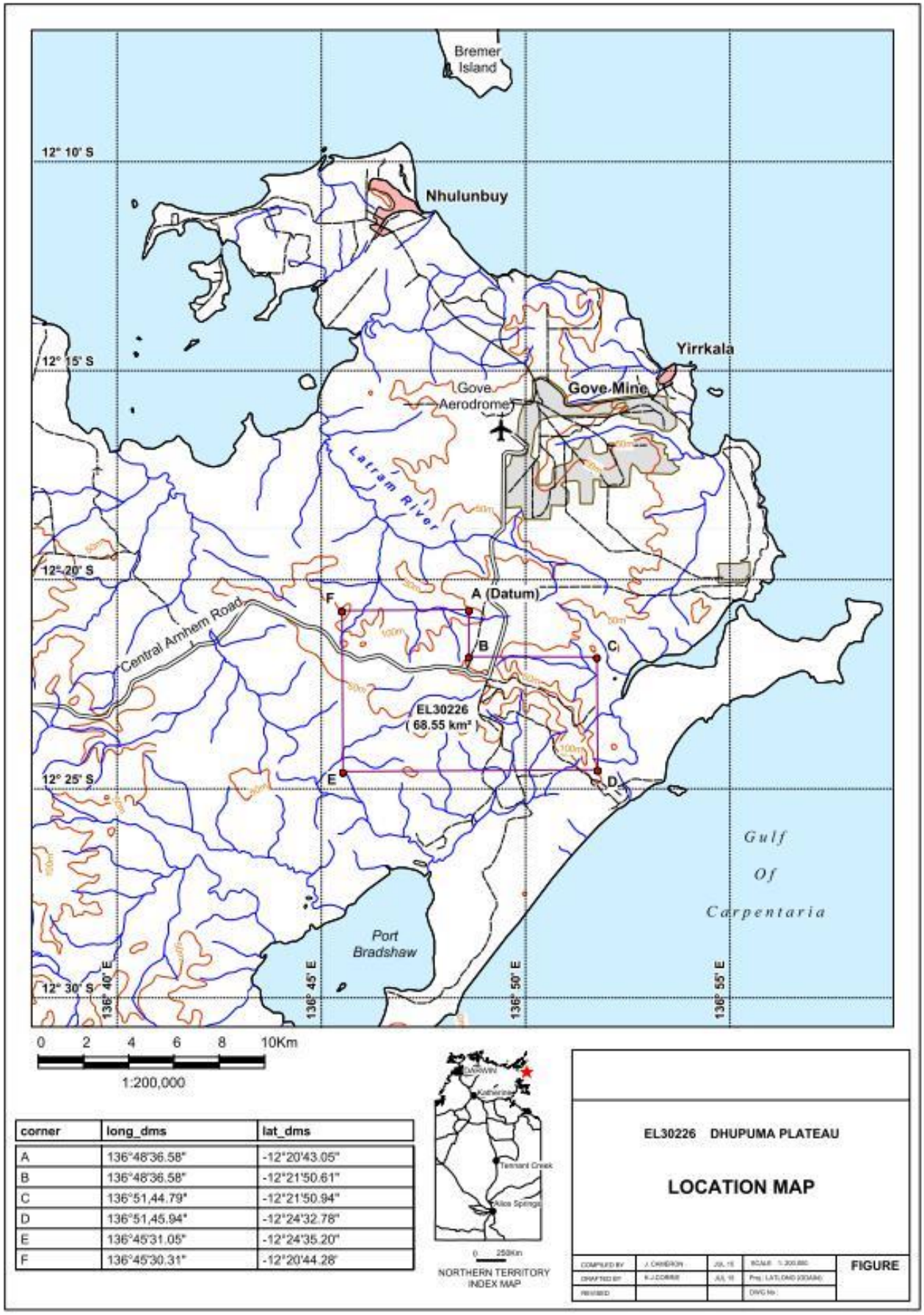
4. LOCATION AND ACCESS

The Dhupuma Plateau is a narrow irregular plateau, located 30km south of the township of Nhulunbuy on the Gove Peninsula in north-east Arnhem Land, Northern Territory (Figure 1) and is administered via the Aboriginal Land Trust. Active mining commenced at Gove in 1970. Bauxite resources are currently being mined in the region and ore is exported by Rio Tinto Aluminium.

Access to the project is via the Central Arnhem Highway south from Nhulunbuy (30km) or west from Darwin (1012km).

5. PHYSIOGRAPHY

EL30226 lies within the transition zone between the Arafura Fall and Gulf Fall physiographic sub-divisions due north of Port Bradshaw (Rawlings et al., 1997). The tenement surrounds the Dhupuma Plateau which has an average elevation of approximately 105m and a gentle southerly slope with steep breakaways on the northern and southern sides including tributaries draining respectively to the Latram River and Dalywoi Bay and Port Bradshaw.



corner	long_dms	lat_dms
A	136°48'36.58"	-12°20'43.05"
B	136°48'36.58"	-12°21'50.61"
C	136°51,44.79"	-12°21'50.94"
D	136°51,45.94"	-12°24'32.78"
E	136°45'31.05"	-12°24'35.20"
F	136°45'30.31"	-12°20'44.28"

Figure 1: Location Map EL30226

6 GEOLOGY

The geology of the Gove Peninsula in the area where the bauxite deposits are developed comprises Palaeoproterozoic (ca 1870Ma) metasediments, mafic gneiss and intrusives of the Bradford Complex overlain by a 100-200m thick sequence of Lower Cretaceous sandstones and claystone of the Yirrkala Formation (Figure 2). During the Tertiary period, the region underwent extensive lateritisation resulting in bauxite development such as that seen at Gove. Beneath the laterite profile at Gove, the Yirrkala Formation consists mainly of friable, kaolinised arkosic sandstone and quartz sandstone with minor claystone interbeds. While several occurrences of bauxite have been recorded in the east Arnhem area, further large economic deposits outside of the Gove mine site have not been discovered.

The main plateau hosting the Gove deposits is gently undulating and is typically 30-60m above sea level (ASL), significantly lower than the surface of the Dhupuma Plateau which ranges between 85-115m ASL. The thickness of the bauxite sheet in the Main Gove Plateau deposit reportedly averages about 3.7 m, and ranges from absent at plateau edges and on hill crests to 10 m thick in topographic swales. At Dhupuma Plateau the thickness of the bauxite horizon is reported by previous workers as ranging between 3- 11m thick.

The deposit type sought is lateritic bauxite derived from the weathering of aluminous sediments in a tropical to sub-tropical environment. Up to eight discrete layers are recognised in a complete bauxite laterite profile (Figure 3) including from surface: topsoil; loose pisolitic bauxite; cemented pisolitic bauxite; tubular bauxite; lower nodular bauxite; nodular ironstone; mottled zone; and saprolite. Not all bauxite sections contain the full bauxite profile.

In general the bauxite mineralogy of the Gove deposits is composed of gibbsite and minor boehmite, particularly in the upper levels of the profile. Silica is present as free quartz and in kaolinite and haematite and goethite are the main iron oxide constituents.

7 GEOPHYSICS

The project area is covered by a regional scale aeromagnetic survey flown for the NTGS in 1990-92 (Rawlings et al., 1997). The radiometric data can be used to distinguish the laterite covered areas from those of both basement and Quaternary sand cover. Thorium is mostly immobile in chemical weathering environments, and as such the intensity of the Thorium channel relative to the Potassium and Uranium channels can be used as a first pass proxy to estimate the degree of in situ weathering over a given area.

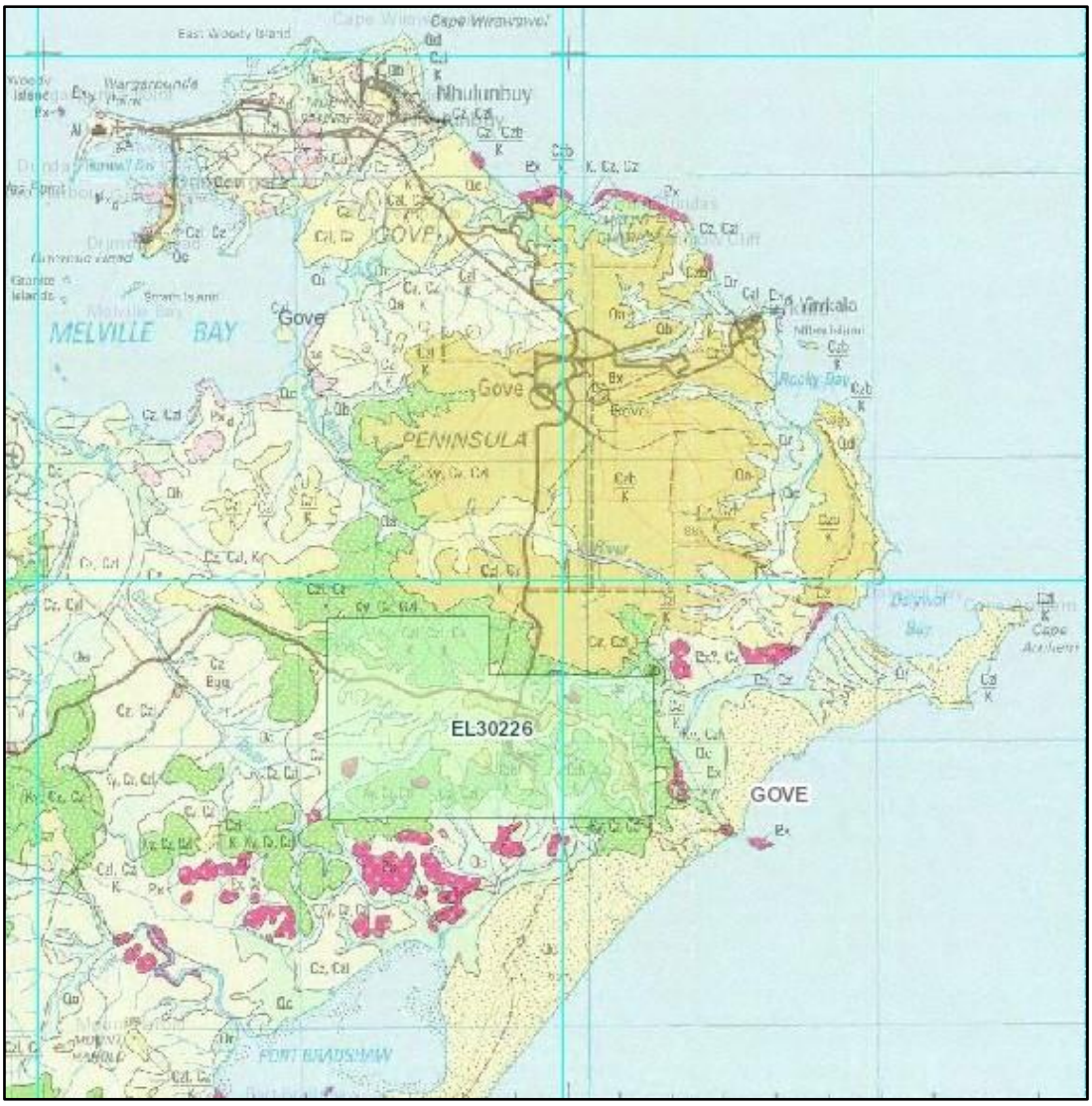


Figure 2: Regional Geology of Gove Peninsula and Dhupuma Plateau and Outline of EL30226. (Source: NTDME Strike)

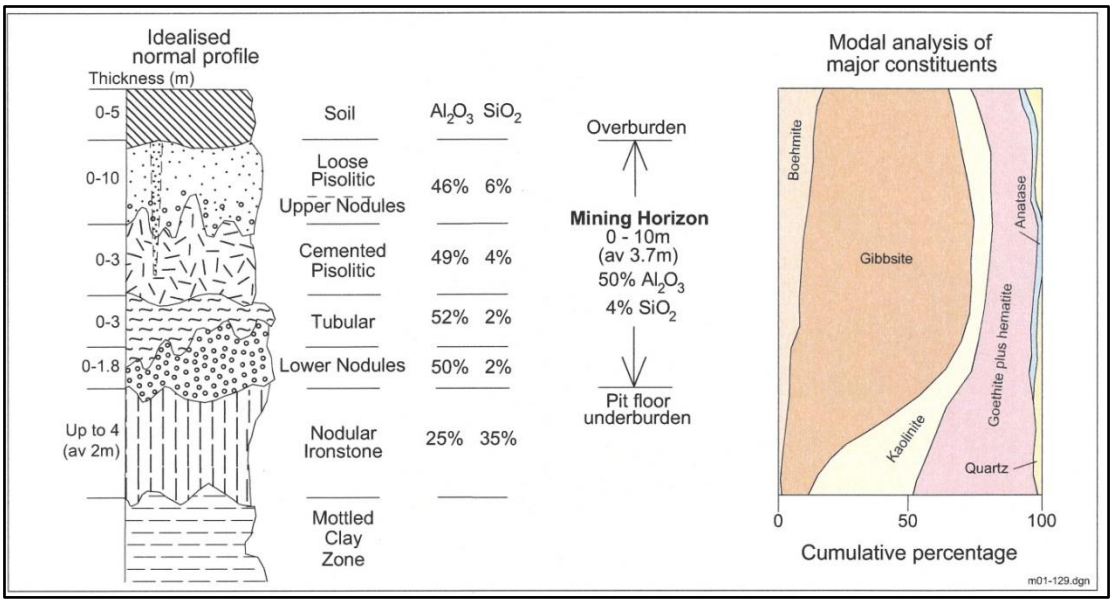


Figure 3: Gove area bauxite profile (Source: Firenczi 2001)

8 PREVIOUS EXPLORATION

Previous historical exploration open file data on EL30226 is limited. While anecdotal evidence suggests that the Dhupuma plateau area has been explored at some level for bauxite most previous work described was undertaken by the Northern Territory Government (the NT Geological Survey and the NT Mines Branch) as part of their regional geology and mineralisation programs between 1964 -1997.

In 1964 seven RAB and two diamond holes were drilled upon the plateau. The drilling was undertaken to determine foundation conditions for satellite tracking antenna sites. The seven RAB holes are reported to have intersected weakly cemented pisolitic bauxite, ranging from 1.8-4.3m thick, underlain by tubular bauxite. One diamond hole (DDH3) is reported as intersecting at least 4.1m of tubular bauxite (Hickey 1987).

Firenczi (2001) reports some 55 water boreholes were drilled in the central portion of Dhupuma Plateau with various holes intersecting a bauxite layer that ranges between 3.5 – 11m in thickness.

8.1 Gulkula Mining Company Pty Ltd Exploration in Year One

During the first year of exploration Gulkula Mining exploration activities included:

- reconnaissance geological and sampling traverses over the north, south and central areas of the Dhupuma Plateau;
- completion of a maiden drilling program comprising 182 vacuum-lift drill holes for 690.5 metres; and
- baseline flora and fauna and cultural heritage surveys.

8.2 Gulkula Mining Company Pty Ltd Exploration in Year Two

During the second year of exploration Gulkula Mining exploration activities included completion of:

- a second stage of drilling on the Dhupuma Plateau comprising 226 vacuum-lift drill holes for 602.25 metres for resource confirmation and mine planning purposes and to test potential extensions to mineralisation;
- a JORC 2012 compliant mineral resource estimate;
- a scoping study on the mining aspects of the project which included preliminary mine production scheduling, cost and productivity modelling and cashflow modelling; and
- an initial desktop study of the Dhupuma Plateau Hydrology and Hydrogeology.

9 EXPLORATION ACTIVITIES DURING THE REPORTING PERIOD

During the third annual reporting period exploration activities undertaken included flora and fauna and hydrology and hydrogeology surveys, a Naturally Occurring Radioactive Materials (NORM) study and a groundwater monitoring bore drilling and installation program.

9.1 Flora and Fauna Surveys

Gulkula Mining has previously undertaken and reported the results of baseline flora and fauna studies including a literature review, consultation and dry season (2014) and wet season (2015) field surveys.

As part of the environmental assessment process for the project the Commonwealth Department of Environment and Energy requested information on the potential impacts from the proposed project on groundwater recharge that feed spring-fed soaks (West Soak and East Soak) in the vicinity of the project area (Figure 4). West Soak had been identified as potential habitat for the conservation listed (Endangered - Environment Protection and Biodiversity Conservation Act) Gove Crow Butterfly, *Euploea alcathoe enastri.*

EcOz was engaged to prepare and complete a desktop and field survey for the habitat and occurrence of the Gove Crow Butterfly on Dhupuma Plateau and surrounding areas.

The Gove Crow Butterfly is restricted to the Gove Peninsula and is associated with wet monsoon forest patches, always associated with permanent creeks or perennial groundwater seepages or springs that form swamplands, usually along drainage lines or flood plains in coastal or near coastal lowland areas. It also occurs in mixed paperbark tall open forest with rainforest elements in the understorey adjacent to rainforest. The larval food plants include several vines in the family *Apocynaceae*, but the preferred food plant appears to be *Parsonsia alboflavescens*.

A field survey was conducted on the 23 and 24 of January 2017. The survey targeted two soaks, West Soak and nearby East Soak (Figure 4) and involved searching in, and in the vicinity of the rainforest patches with particular attention to the transition zone between the rainforest and woodland looking for adult butterflies and for potential larval food plants.

The two areas of rainforest surveyed were deemed not ideal habitat for the Gove Crow Butterfly. The open woodland surrounding the rainforest at West Soak does not support Melaleucas, whilst the East Soak does not support any significant areas of rainforest. The known larval food plant, the vine P. alboflavescens was not recorded at either soak.

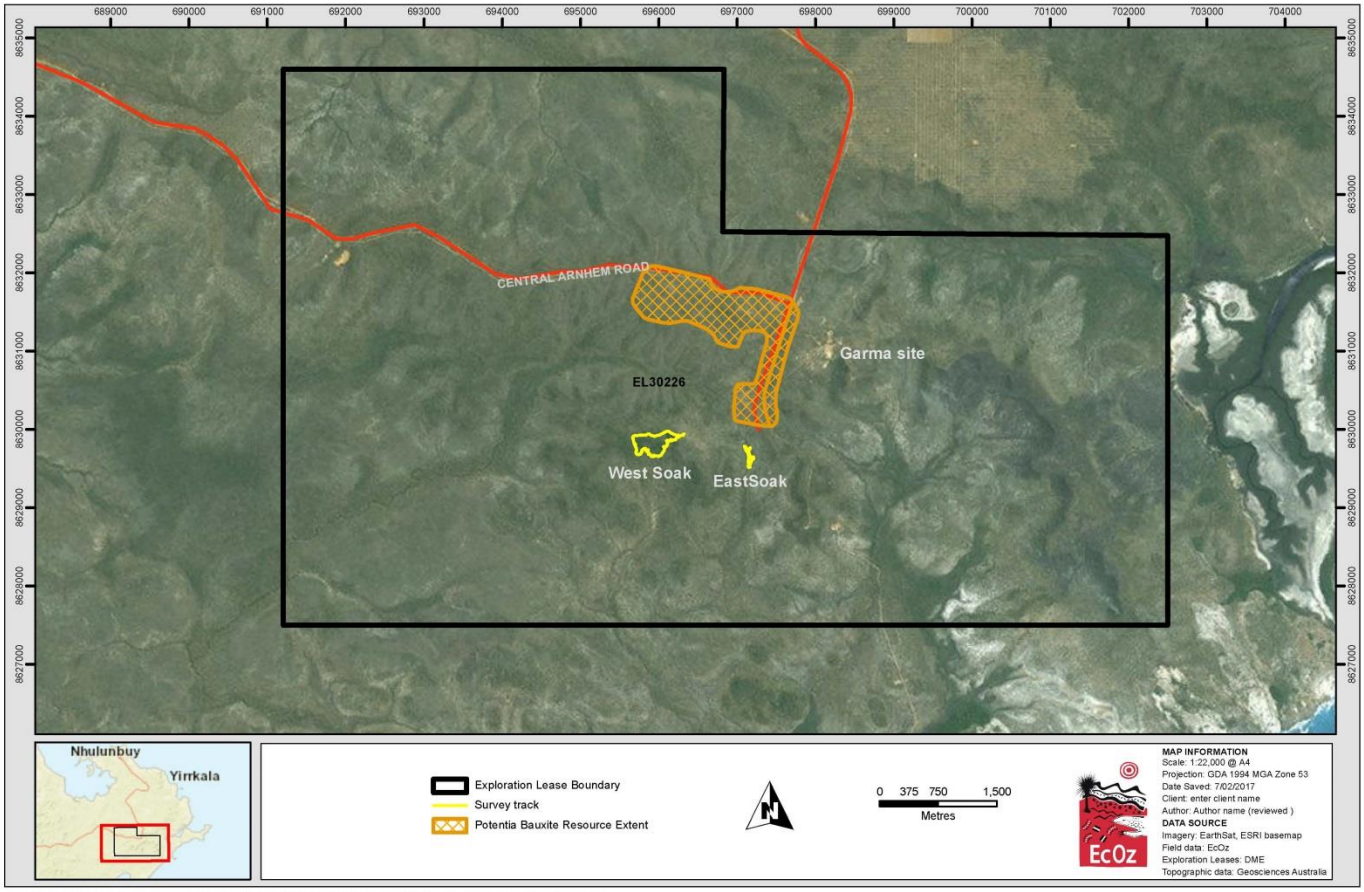


Figure 4: Location Map West Soak and East Soak survey areas.

9.2 Naturally Occurring Radioactive Materials (NORM) Study

On the 23rd November 2016 Gulkula Mining submitted to the Department of the Environment and Energy (the Department) a referral under the *Environment Protection and Bodiversity Conservation Act 1999* (EPBC Act) concerning a proposed action, namely the Dhupuma Plateau Mine, Gove, Northern Territory.

On the 14th December 2016 the Department wrote to Gulkula Mining stating that the Department had received no documentation regarding uranium and thorium levels in the referral documentation to support the claim that the proposed action does not constitute a nuclear action.

The Department stated it needed to consider whether the proposed action constitutes a nuclear action in accordance with section 22 of the EPBC Act; sections 2.01-2.03 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations); and the Australian Radiation Protection and Nuclear Safety Regulations 1999.

The Department outlined that Gulkula Mining's proposal could be considered to be a nuclear action as defined by the EPBC Act if it were to result in:

- the mining or milling of uranium ore
- establishing or significantly modifying a large-scale disposal facility for radioactive waste
- decommissioning or rehabilitating a facility or area in which an activity described above has been undertaken.

Furthermore the Department stated that if material associated with and/or subject to mining on the Dhupuma Plateau is of a sufficient level of radioactivity (as defined by section 2.02 of the EPBC Regulations), Gulkula Mining's proposal may be considered a nuclear action.

The Department requested that in order to assist the Department in determining whether the proposal is a nuclear action, could Gulkula Mining provide the following additional information:

- the results of any geochemical survey of the proposed action area that identifies whether the ore body contains uranium and/or thorium.

Gulkula Mining has undertaken a geochemical survey of the proposed bauxite mine area to identify whether the bauxite ore body contains significant levels of uranium and/or thorium.

Gulkula Mining has drilled a total of 370 holes within the proposed mining area to test the Dhupuma Plateau for bauxite mineralisation. A representative number of those drill holes, distributed across the mining area, were selected for analysis for U, Th and K at the Bureau Veritas laboratory in Perth, Western Australia.

A total of 20 holes, representing ~5% of all holes drilled within the mining area, were selected and sampled for analysis. The location of the drilling and the sampled drill holes is shown in Figure 5. The drill hole intervals sampled were composited for each hole commenced at surface (0.0 m) and ended at the base of the bauxite layer (depths ranging from 0.50 m -3.50 m for the sample set).

Pulp samples were analysed using a Peroxide Fusion (PF100) where the samples were fused with Sodium Peroxide and the subsequent the melt dissolved in dilute hydrochloric acid for analysis, determined by Inductively Coupled Plasma (ICP) Mass Spectrometry with detection limits of 0.5 ppm for both U and Th and 0.1% for K. Three samples were analysed in duplicate in order to provide a measure of the total error of sampling and the repeatability of the analytical method.

The results of this study for U and Th are summarised in Table 2 below. The K analytical results were below the analytical technique detection limit of 0.1 % so are not presented. Full analytical results (U, Th and K) are included as Appendix 1. The pulp duplicates returned a low variance of results.

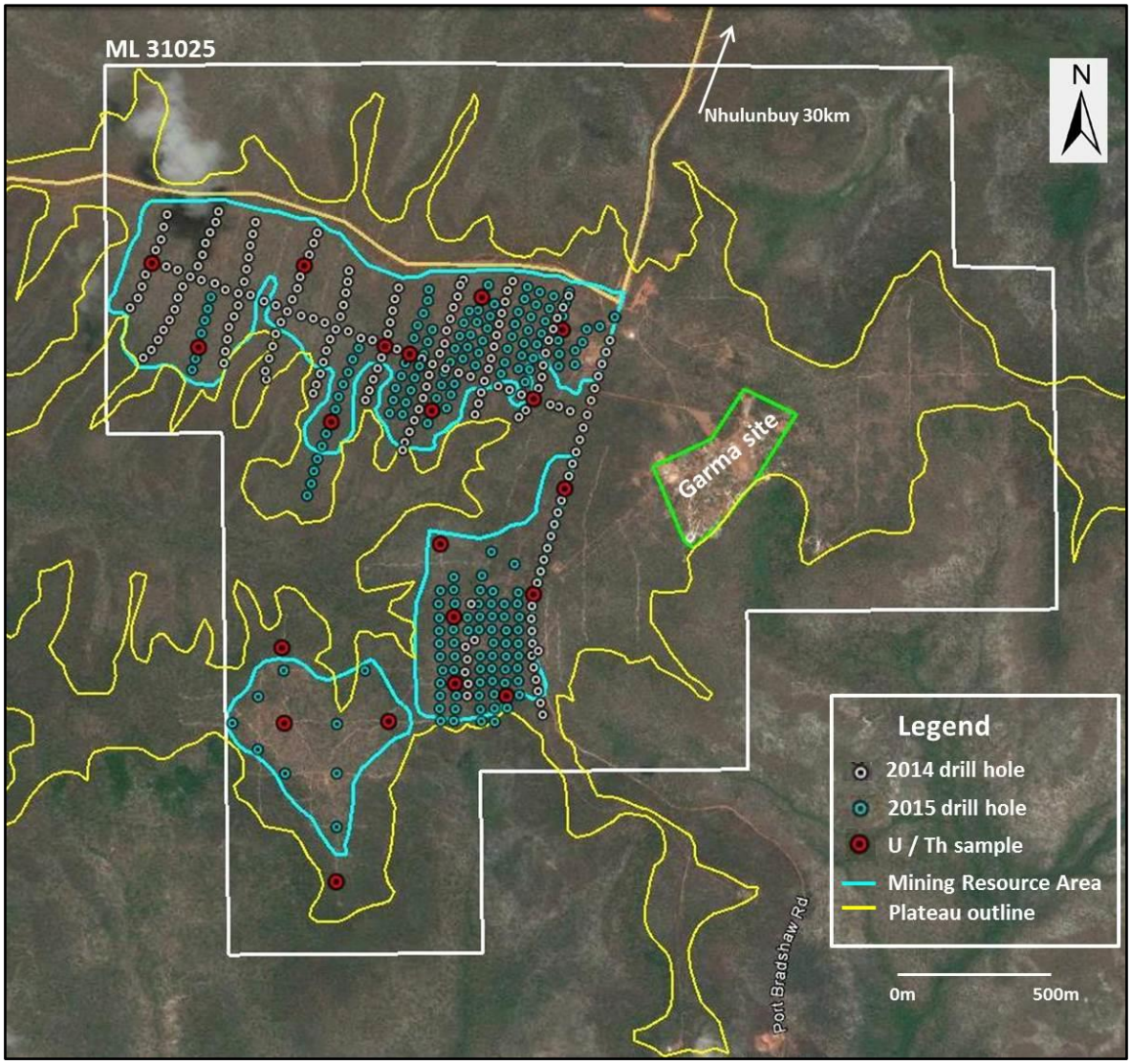


Figure 5: Dhupuma Plateau Bauxite Project – U / Th sample locations.

Table 2: Chemical and activity concentrations of Dhupuma Plateau Mine bauxite

Dhupuma Plateau Mine	Uranium (ppm)	Thorium (ppm)	U Activity (Bq/g) [a]	Th Activity (Bq/g) [b]	Combined U and Th Activity (Bq/g) [c]
Average result	5.4	35.3	0.137	0.144	0.281
Median	5.0	33.3	0.127	0.135	0.262
Minimum value	4.5	26.0	0.114	0.106	0.220
Maximum value	8.0	56.5	0.203	0.230	0.433
Range of values	4.5 – 8.0	26.0 – 56.5	0.114 – 0.203	0.106 – 0.230	
# of drill holes sampled	20	20			
Detection Limit (ppm)	0.5	0.5			

Note: [a]: Calculated activity specific concentrations for natural uranium which is composed of 99.27% U-238, 0.72% U-235 and 0.0056% U-234 [ARPANSA (2017) Pers Comm.].

[b] Calculated activity specific concentration for thorium - Th-232 [ARPANSA (2017) Pers Comm.].

[c] Combined activities for exempt dealings. Schedule 2 Part 1 Item 2 (b) of the ARPANS Regulations [Australian Radiation Protection and Nuclear Safety Regulations 1999.].

The evaluation demonstrates that Dhupuma Plateau Mine bauxite contains average levels of U and Th of 5.4 ppm and 35.3 ppm and level ranges of 4.5 – 8.0 ppm and 26.0 – 56.5 ppm respectively. Using this analytical data it is possible to calculate the activity specific concentrations for U-nat and Th-nat in the Dhupuma Plateau Mine bauxite. The average calculated activity specific concentration for natural U is 0.137 Bq/g and for natural Th is 0.144 Bq/g. Combined these average activity specific concentrations total 0.281 Bq/g. These concentrations are well below the trigger level of 1 Bq/g.

9.3 Hydrology and Hydrogeology Investigations

In the current reporting year Gulkula Mining conducted further surface water and groundwater studies including surface water monitoring field sampling and installation of groundwater monitoring bores.

9.3.1 Surface water Monitoring

In January 2017 Gulkula Mining engaged EcOz Environmental Consultants (EcOz) to conduct baseline surface water monitoring of watercourses draining the proposed Dhupuma Plateau Bauxite Mine (Figure 6). This work was undertaken as part of the environment protection measures included in Gulkula Mining's Mining Management Plan (MMP) and Water Management Plan (WMP). The preparation and approval of these plans is required under the Northern Territory (NT) Mining Management Act prior to the commencement of mining.

The surface water monitoring program objectives included:

- Establishment of routine surface water monitoring sites representative of all catchments receiving run-off from the mine.
- Determination of water quality parameters relevant to the detection of mining impacts and the identified potential risks at Dhupuma Plateau.
- Collection of baseline (pre-mining) surface water quality data at the routine monitoring sites to enable differentiation of impacts caused by mining from pre-existing conditions and to determine appropriate assessment criteria (trigger values).
- Regular sampling of routine surface water quality monitoring sites during operations to assess the results against baseline conditions and detect any impacts.
- Analysis and interpretation of long-term surface water quality trends using the database in order to satisfy annual MMP reporting required by the regulator.

The water quality parameters selected for monitoring are listed in Table 3.

Physical parameters are measured in-situ using hand-held field meters and provide basic information on current water quality condition. Parameters such as temperature, pH and oxidation reduction potential (ORP) can influence the form of other parameters, such as the solubility of metals and amount of ammonia versus ammonium. Dissolved oxygen (DO) levels can indicate the water source and/or presence of algal blooms, or excessive organic loads. Turbidity indicates possible erosion and sedimentation issues; as does electrical conductivity (EC), total dissolved solids (TDS) and salinity. EC, pH and ORP can also indicate the water source (surface or groundwater) or AMD issues.

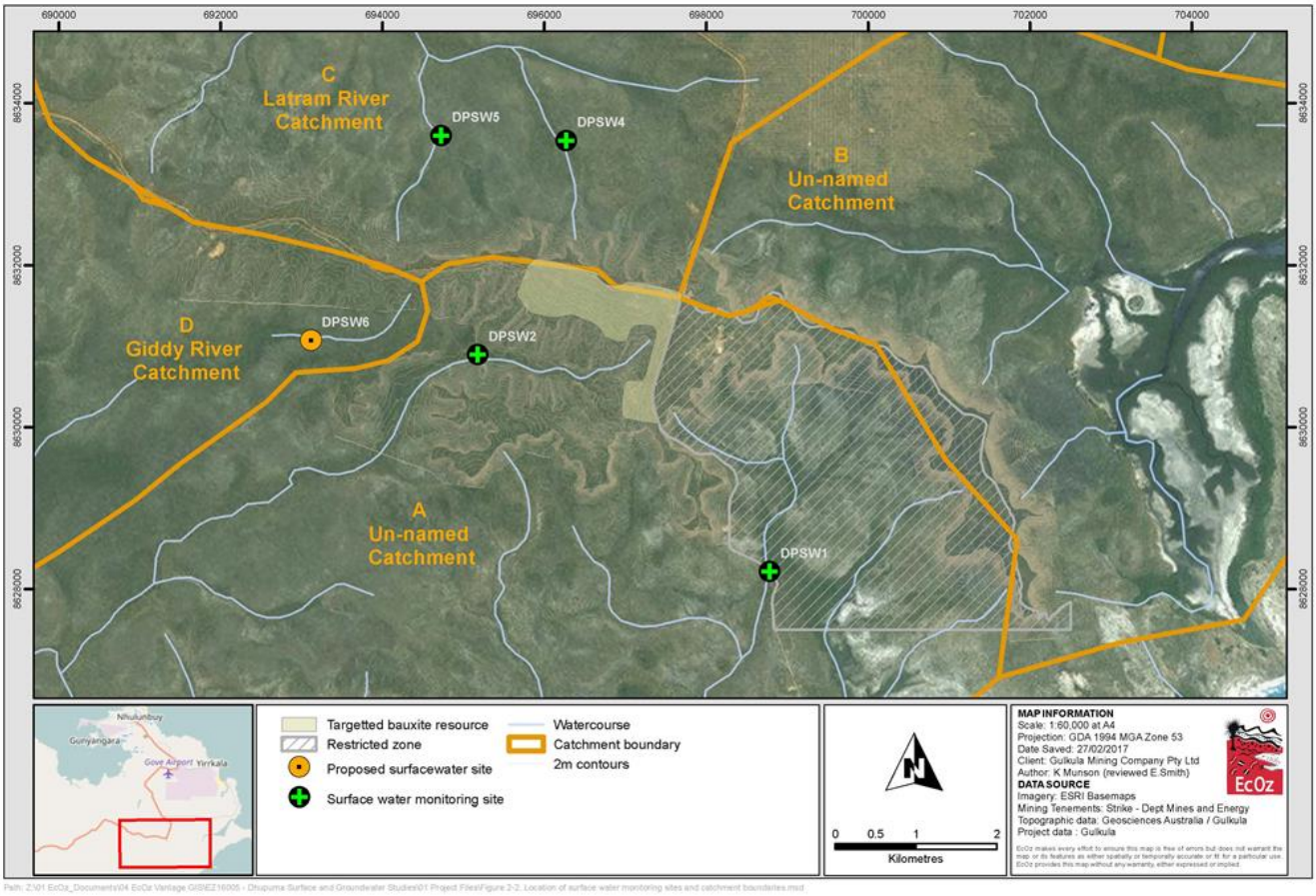


Figure 6: Location of surface water monitoring sites and catchment boundaries.

Table 3: Dhupuma Project Water Quality Parameters

PHYSICAL PARAMETERS
Temperature, pH, Dissolved Oxygen (DO), Electrical Conductivity (EC), Total Dissolved Solids (TDS), Salinity, Turbidity, Oxidation Reduction Potential (ORP). Also record flow conditions, L/s if possible, or fast/medium/slow and any other relevant site observations such as algae, pollutants, odour, water colour etc
LABORATORY PARAMETERS
Major Anions: Hydroxide Alkalinity as CaCO3, Carbonate Alkalinity as CaCO3, Bicarbonate Alkalinity as CaCO3, Total Alkalinity as CaCO3, Sulfate as SO4, Chloride
Major Cations: Calcium, Magnesium, Sodium, Potassium
Nutrients: Ammonia (NH3) as N, Nitrite (NO2) as N, Nitrate (NO3) as N, Nitrite + Nitrate (NOx) as N, Total Kjeldahl Nitrogen (TKN) as N, Total Nitrogen (TN) as N, Total Phosphorus (TP) as P, Reactive Phosphorus as P
Dissolved Metals: Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Mercury
Hydrocarbons: Total Petroleum Hydrocarbons (TPH) NEPM 1999 Fractions: C6 - C9 Fraction, C10 - C14 Fraction, C15 - C28 Fraction, C29 - C36 Fraction, C10 - C36 Fraction (sum) Total Recoverable Hydrocarbons NEPM 2013 Fractions: C6 - C10 Fraction, C6 - C10 Fraction minus BTEX (F1), >C10 - C16 Fraction, >C16 - C34 Fraction, >C34 - C40 Fraction, >C10 - C40 Fraction (sum), >C10 - C16 Fraction - Naphthalene (F2) BTEXN: Benzene, Toluene, Ethylbenzene, meta- & para-Xylene, ortho-Xylene, Total Xylenes, Sum of BTEX, Naphthalene

It is proposed that surface water monitoring will be undertaken up to three times during the wet season and once during the dry season at sites where flow is maintained. Sampling frequency and timing will be reviewed after a year of data collection.

Samples for laboratory analysis are collected into laboratory-supplied bottles for required sample preservation, and delivered to the laboratories for analysis. Cations, anions and alkalinity reflect the water source and can indicate major changes in water chemistry due to catchment impacts. Dissolved metals may increase due to the discharge of mine pit water. Nutrients may increase due to erosion and sedimentation, or seepage from septic systems. Hydrocarbons can indicate pollution from vehicles, machinery, workshops or fuel storages.

Results from the sampling events completed in April 2016 and January 2017 are detailed in the study included in Appendix 2. The next sampling event is planned for August 2017 and the analytical results delivered in September for inclusion in the next reporting period.

9.3.2 Groundwater Monitoring

In April 2016 EcOz completed a field reconnaissance survey of water resources within EL30266. The survey aimed to inform water management and monitoring; and identify knowledge gaps and areas requiring further investigation. Information gathered during the site assessment expanded on data collated in EcOz's 2015 desktop Hydrology and Hydrogeology Study. To adequately characterise groundwater resources beneath the lease the 2016 survey report recommended the installation of two new groundwater monitoring bores and the rehabilitation of two existing bores.

Drilling was undertaken by Allwell Drilling using a truck mounted Atlas Copco Rotamec 1302 water well rig (Plate 1) and the program supervised by EcOz. All bores were drilled with a chevron or drag bit using a polymer based mud system (predominantly AMC FS2000). Drill cuttings were collected every three metres and laid out in order of increasing depth for logging by the site hydrogeologist. The drilling crew bagged samples every three metres and collected air lift water samples in 1 L plastic bottles at the end of bore development. These were submitted to DLRM in accordance with bore licensing conditions.

The two new groundwater monitoring bores (RN040063 and RN040064) were constructed in accordance with the Minimum Construction Requirements for Water Bores in Australia (2nd Edition). Steel surface casing (209 mm ID) was installed and cemented to a depth of approximately 5.5 metres below ground level and the monitoring bores were constructed using 101 mm ID Class 12 PVC screw jointed casing with machine cut 1 mm screens. The screened interval was gravel packed with 3 – 5 mm graded gravel and capped with a 1 m seal of bentonite chips. The annulus was backfilled to a depth of 5 m with stabilising fill and then grouted to surface with cement. The monitoring bores were completed with a lockable 165 mm IS steel standpipe and a one metre diameter self-draining concrete slab set around the surface casing and a steel marker post was installed adjacent to each bore.

On completion the bores were developed using compressed air delivered through a 30 mm poly tube. Development continued until groundwater was free of mud and sediment, and field parameters, Electrical Conductivity (EC), pH, temperature and Oxidation Redox Potential (ORP), stabilised.

Two existing bores, RN034244 and RN034245 (Figure 7), were rehabilitated in order that they could be used as monitoring bores for the Dhupuma Project.

RN034244 is a NTG (Northern Territory Government) groundwater investigation bore situated in a borrow pit clearing on the western side of Bawaka Rd approximately 4 km south of the Dhupuma Rd intersection. When inspected in April 2016 the 203 mm steel surface casing was bent over and loose. Allwell Drilling removed the surface casing revealing that the 152 mm PVC casing was also damaged near the surface. They proceeded to re-line the bore with 100 mm screw jointed Class 12 PVC to a depth of 40.5 m. The bottom 3 m was screened with 1 mm hand-cut slots. The 203 mm surface casing was replaced and grouted. The bore was completed with a 1 m lockable stand-pipe and is appropriate for ongoing water level monitoring.

Bore RN034245 is a NTG groundwater investigation bore drilled in 2005. The bore is located on the eastern edge of Bawaka Rd approximately 2 km south of the Dhupuma Rd intersection. When surveyed in April 2016 the bore was blocked at a depth of 37.9 mBGL. Allwell ran a depth tool down the bore and encountered a blockage at 38 m but were able to push the tool through to a total depth of 70 m. Allwell ran 30 mm polytube to a depth of 66 m and developed the bore using compressed air for approximately 1.5 hours. The airlift yield was estimated at 3 L/s, groundwater remained very turbid throughout the airlift and contained fine black sand. This observation was consistent with results from an NTG pumping test where the discharge water failed to clear after 24 hours of pumping. The field parameters of the discharge water stabilised at EC of 90 µS/cm, a pH of 6.9, a temperature of 29.4 °C and an ORP of 19 mV. The final depth of 73 m was measured after development. The bore was secured with a lockable steel cap and is appropriate for ongoing water quality and level monitoring.

The bore drilling and construction details are summarised in Table 4 and Table 5. Bore locations are shown below in Figure 7 and an example of the collar construction illustrated in Plate 2.

Bore logs for the bores are included in Appendix 3. These logs (Statement of Bore) have been submitted to the NTG as per Water Regulations (2009).

Bore water quality sampling of the monitoring bores is scheduled to be undertaken in August 2017 and the analytical results delivered in September for inclusion in the next reporting period.

Table 4: Dhupuma Plateau groundwater bore drilling summary.

Bore ID	Works Description	Easting	Northing	Drilled Depth (m)^	Airlift Yield (l/s)	Water Level (m)^	Electrical Conductivity (µs/cm)
RN040063	Monitoring Bore	697537	8631329	69	1.5	44.42	125
RN040064	Monitoring Bore	696049	8631345	63	1.5	32.72	82
RN034244	Rehabilitation	698258	8628751	-	-	7.9	-
RN034245	Rehabilitation	697378	8630251	-	3.0	38.07	90

^ All depths recorded as metres below ground level

Table 5: Dhupuma Plateau groundwater bore construction summary.

Bore ID	Drilled Depth (m)^	Constructed Depth (m)^	Casing Type	Casing From (m)*	Casing To (m)^	Screens From (m)^	Screens To (m)^
RN040063	69	66.5	101 mm Class 12 PVC	+0.70	66.5	58.5	64.5
RN040064	63	61	101 mm Class 12 PVC	+0.70	61	57	60
RN034244	54	43.5	101 mm Class 12 PVC	+0.1	40.5	40.5	43.5
RN034245	93	73 (76.1)**	152 mm PVC	+0.7	70.5	69.6	76.1

^ Depths recorded as metres below ground level
* + Indicates depth above ground level
** Bore was dipped at 73 m after airlifting, constructed depth from bore report is 76.1 m.

Plate 1: Groundwater Monitoring Bore Drilling

Plate 2: Completed monitoring bore RN040064

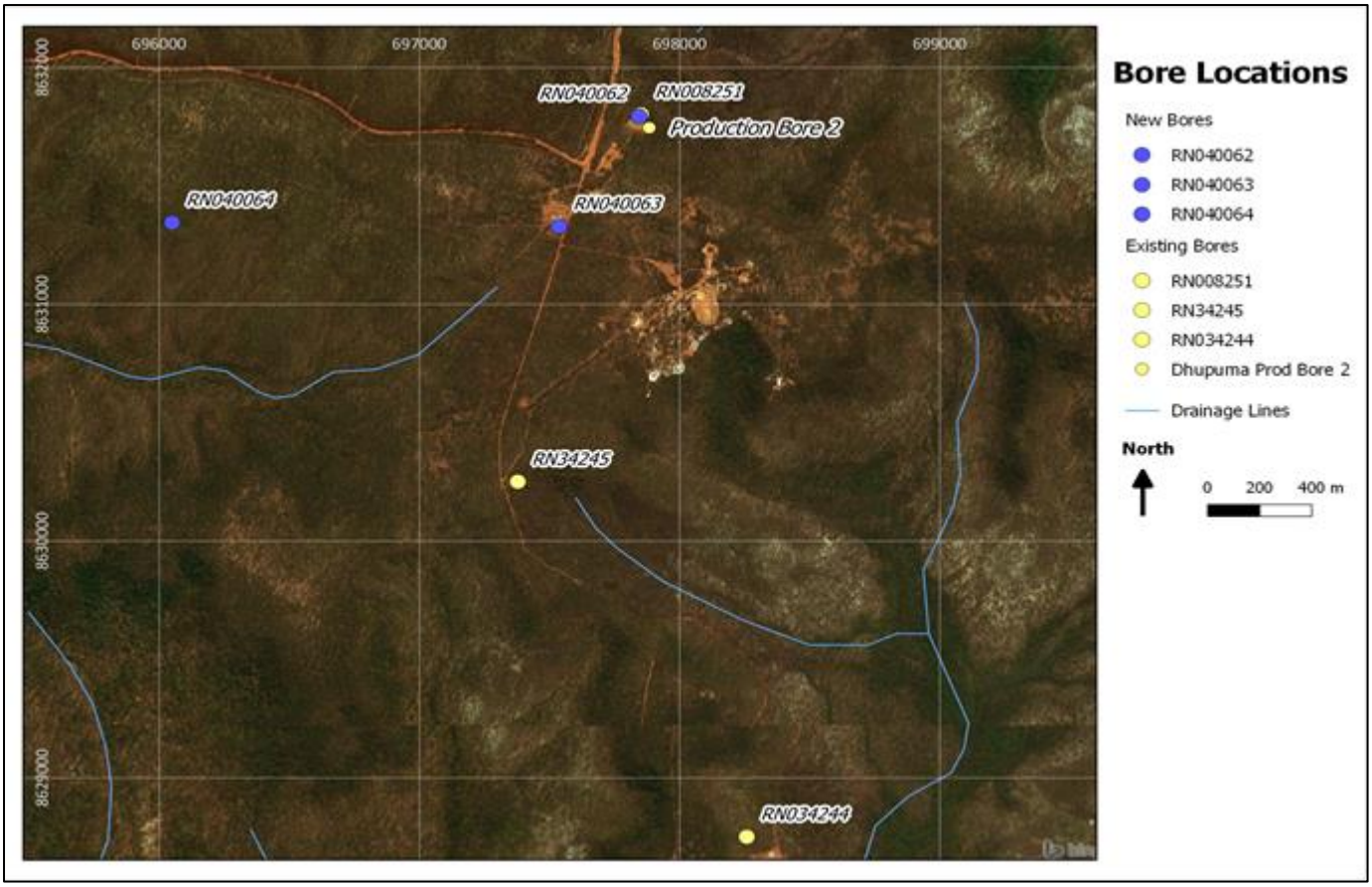


Figure 7: Dhupuma Plateau Bore Locations

10 CONCLUSIONS AND RECOMMENDATIONS

The third year of exploration on EL30226 has focussed on studies to advance the Mine Management Plan (MMP) requirements for the mining permitting of the Dhupuma Bauxite project. The primary purpose of a MMP is to formalise the actions to be taken and strategies to be implemented, that combined, will manage impacts to the environment to acceptable and sustainable limits over both the short and long-term. In the reporting period this work included flora and fauna and hydrology and hydrogeology surveys, a Naturally Occurring Radioactive Materials (NORM) study and establishment of both a surface water monitoring program and groundwater monitoring bore drilling and installation program.

11 PROPOSED EXPLORATION ACTIVITIES FOR THE NEXT REPORTING PERIOD

The following exploration activities are proposed for the fourth annual reporting period of 11th August 2017 to 10th August 2018.

- Pre-mining development drilling.
- A mine feasibility study update to include the above drilling results.
- Ongoing baseline hydrological studies including surface water and groundwater sampling programs.

12 REFERENCES

Ahmad M and Munson TJ (compilers), 2013. Geology and mineral resources of the Northern Territory. Northern Territory Geological Survey, Special Publication 5.

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EcOz (2015) Dhupuma Plateau Desktop Hydrology and Hydrogeology Study (EL30226). Prepared for Gulkula Mining Company, August 2015.

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EcOz (2017) Dhupuma Plateau Bauxite Mine Surfacewater Baseline Monitoring. Prepared for Gulkula Mining Company Pty Ltd, January 2017.

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Appendix 1

Dhupuma Plateau U/Th/K Analysis Report

Bureau Veritas Minerals Pty Ltd
BUREAU VERITAS MINERAL TESTING & LABORATORY SERVICES
ABN: 30 008 127 802
58 Sorbonne Crescent Canning Vale Perth WA 6155 Australia
Telephone (08) 9456 0404
Facsimile (08) 9456 0403

Reference: **u273054.b**
Date Finished: 10/02/2017
Order:
Project:
Date Received: 07/02/2017
Samples Analysed: **27**

FINAL ANALYSIS REPORT

Analysis of Mineral Samples

for

Gulkula Mining Pty Ltd

Suite 4
Level 1
101 Mitchell Street Darwin Northern Territory 0800

Attention: Mr John Cameron

Authorised By:

Tom Lowther
Operations Manager
Bureau Veritas Minerals Pty Ltd

Bureau Veritas Minerals Pty Ltd
BUREAU VERITAS MINERAL TESTING & LABORATORY SERVICES
ABN: 30 008 127 802
58 Sorbonne Crescent Canning Vale Telephone (08) 9456 0404
Perth WA 6155 Australia Facsimile (08) 9456 0403

Reference: u273054.b **Order Number:** Page 1 of 2

	U FUS ppm	Th FUS ppm	K FUS %
Detection Limit	0.5	0.5	0.1
GA14001C	5.0	31.0	<0.1
GA14056C	5.0	31.5	<0.1
GA14078C	5.0	26.0	0.1
GA14130C	5.0	30.5	<0.1
GA14092C	5.0	31.5	<0.1
GA14149C	5.0	35.5	<0.1
GA14158C	5.5	33.5	<0.1
GA14158C-C-Dupl	5.5	31.5	<0.1
GA15006C	5.0	29.5	<0.1
GA15015C	4.5	30.5	<0.1
GA15041C	5.0	30.5	<0.1
GA15063C	5.5	33.5	<0.1
GA15092C	5.0	32.0	<0.1
GA15195C	5.0	30.5	<0.1
GA15220C	6.0	33.5	<0.1
GA15187C	6.0	36.5	<0.1
GA15191C	5.5	33.5	<0.1
GA15185C	5.0	29.5	<0.1
GA15179C	5.0	32.0	<0.1
GA15111C	5.0	33.0	<0.1
GA15111C-C-Dupl	5.5	34.0	<0.1
GA15151C	5.0	36.0	<0.1
GA15146C	6.0	35.0	<0.1
Std Nominal	0.5	2.0	0.6
Determined	0.5	2.0	0.7
GA15166C	5.0	33.5	<0.1
GA15212C	6.5	47.0	<0.1
GA15210C	7.0	47.0	<0.1
GA15201C	5.0	42.5	<0.1
GA15201C-C-Dupl	5.0	42.5	<0.1
GA15203C	8.0	56.5	<0.1
GMC-1	7.0	50.0	<0.1
Std Nominal		2.0	0.1
Determined	1.5	2.0	0.1
Std Nominal	1.0	1.5	1.4
Determined	2.0	1.5	1.4
Std Nominal	116	76.0	2.5
Determined	117	76.5	2.6
Std Nominal			
Determined	1.5	1.0	<0.1

****

Bureau Veritas Minerals Pty Ltd
MINERAL TESTING & LABORATORY SERVICES
ABN: 30 008 127 802
58 Sorbonne Crescent Canning Vale Telephone (08) 9456 0404
Perth WA 6155 Australia Facsimile (08) 9456 0403

****

These results pertain to the samples as received at this laboratory.
Where standards are reported, the nominal value for the element is reported above the result found.

Sample Storage
****

The excess material (Residue) will be held after 30 days

The pulp samples (Pulp) will be held after 60 days as per instructions.

Sample Preparation
****

Composites have been prepared by weighing equal amounts of individual samples. The composite samples have then been homogenised by re-pulverising.

Digest and Analysis:
****

The samples have been fused with Sodium Peroxide and subsequently the melt has been dissolved in dilute Hydrochloric acid for analysis. Because of the high furnace temperatures, volatile elements are lost. This procedure is particularly efficient for determination of major element composition (including Silica) in the samples or for the determination of refactory mineral species.

K,FUS
have been determined by Inductively Coupled Plasma (ICP) Optical Emission Spectrometry.
Th,FUS,U,FUS
have been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry.

APPENDIX 2

EcOz Environmental Services

Dhupuma Plateau Bauxite Mine Surfacewater Baseline Monitoring, January 2017

Provided as separate file

APPENDIX 3

Dhupuma Plateau Groundwater Monitoring Bore Logs

THE NORTHERN TERRITORY OF AUSTRALIA

APPROVED FORM 21 (25/01/2011)

STATEMENT OF BORE

As per Water Regulations (2009)

Name of Owner:	Gumatj Corporation Ltd	Registration No.:	040063
Location/Address:	Dhupma Mine Gove	BC Permit No:	
Intended Use:	Monitoring Bore		

GPS Location:	Zone:	GDA94	Other:	Specify:	Easting:	Northing:
	53	☑	☐		697337	8631329

From	To	Particulars of Strata
0	3.5	Bauxite
3.5	7	Ironstone
7	15	Clay, purple to white
15	22	Sandy clay, purple to white
22	23	Sandstone, dark brown hard
23	26	Clay, light grey
26	38.5	Sandy clay light green
38.5	47	Clay white
47	60	Sandy clay, purple to white
60	62.5	Clayey sand, white to purple
62.5	69	Sandy clay, white

Name of Drilling Company: ALLWELL NT PTYLTD

Name of Driller: Alan Davy

Name of supervising driller

Date Commenced: 4/07/2017

Date Completed: 6/07/2017

Depth Drilled: 69 (m)

Completion Depth: 66.5 (m)

METHOD OF DRILLING

Other	Auger	Rev. Circ.	Rotary Air	Rotary Mud
☐	☐	☐	☐	☑

Specify:

HOLE DIAMETER			DRILLING FLUID
From (m)	To (m)	Dia. (mm)	Type
0	5.9	275	Air
5.9	69	203	Mud

PARTICULARS OF CASING

From	To	Dia (ID)	Type
+0.1	5.9	209mm	Steel
+0.7	58.5	101mm	PVC
64.5	66.5	101mm	PVC

PARTICULARS OF PERFORATIONS OR SCREEN STRINGS

From	To	Dia (ID)	Aperture	Type
58.5	64.5	101mm	1mm	Machine slotted PVC

Casing Suspended: Yes ☐ No ☑

Method: Seated

Height of Casing above GL: 0.7 m (m)

Top of Packer Set at: (m)

Length of Packer: (m)

Method of Packer Connection:

CEMENTING/GRAVEL PACKING

From	To	Type
0	5.9	Grout
0	5	Grout
5	23	Backfill
23	24	Bentonite
24	66.5	5mm gravel

WATER BEARING BEDS

Depth (m) From	Depth (m) To	Yield (L/s)	SWL (m)	Duration (hr)	Quality	EC	pH	Bottle No.
47	62.5	1.5	44.42	3				

STRATA / WATER SAMPLES

Have been ☐ Will be ☑

Left at: Darwin

Completion Yield: 1.5 (L/s) Method: Airlift Duration: 3

Completion SWL from 44.42 m Depth of Lift: 66.5

NOTE: No company advertising is to be imprinted on this certificate apart from where requested.

LOCATION SKETCH OF BORE RN: 040063	LOCATION DESCRIPTION OF BORE		
			m/km
	NW ☐	North ☐	NE ☐
	West ☐		East ☐
	SW ☐	South ☐	SE ☐
	OF:		

FINAL CONSTRUCTION STATUS

Capped	Casing Pulled	Left for Obs.	Abandoned	Equipped	Backfilled	Other
☑	☐	☐	☐	☐	☐	☐

ADDITIONAL INFORMATION ABOUT THE BORE: *(Include any information which may assist for future reference)*

Note: The holder of the NT licence shall submit the form to the Department within 28 days of completion of any works.

I certify that the information contained above is true and correct, and that I have complied with the bore licensing requirements and conditions of the Bore Construction Permit as issued if a Bore Construction Permit was required.

Name and licence number of driller: Alan Davy 157

Signature and licence number of licensed driller: 157 Date: 14/07/2017

FOR OFFICIAL USE ONLY

How Located:	GPS	TST	Survey	Hand Plotted	Other
	☐	☐	☐	☐	☐

DESCRIPTION OF PROPERTY:

Rural	Mineral	Pastoral	Reserve	VCL	Other
☐	☐	☐	☐	☐	☐

Lease No: Lot No: Hundred of:

Portion No: Section No: Town of:

Class of Bore:	Town	Domestic	Investigation	Agriculture	Mineral	Pastoral	Other
	☐	☐	☐	☐	☐	☐	☐
Use of Bore:	Production	Investigation	Irrigation	Observation	Monitoring	Roads	None
	☐	☐	☐	☐	☐	☐	☐

Grid Reference: AMG ☐ Clark ☐ Zone: Scale:

Easting: Lattitude: Map Name:

Northing: Longitude: Index Map Number:

Date Registered: Bore Plotted on the map? Yes ☐ No ☐

Dept Officer: Signature:

Remarks:

THE NORTHERN TERRITORY OF AUSTRALIA

APPROVED FORM 21 (25/01/2011)

STATEMENT OF BORE

As per Water Regulations (2009)

Name of Owner:	Gumatj Corporation Ltd	Registration No.:	040064
Location/Address:	Dhupma Mine Gove	BC Permit No:	
Intended Use:	Monitoring Bore		

GPS Location:	Zone:	GDA94	Other:	Specify:	Easting:	Northing:
	53	☑	☐		696049	8631345

From	To	Particulars of Strata
0	2.5	Bauxite
2.5	5	Ironstone
5	21	Clay with some sand & hard brown mudstone
21	27	Clayey sand, dark purple
27	30	Sandy clay, purple
30	32	Clayey sand, purple
32	42	Sandy clay, purple
42	43.5	Clay, white
43.5	50	Sandy clay, purple to white
50	56	Clay, white-trace sand
56	63	Sandy clay

Name of Drilling Company: ALLWELL NT PTYLTD

Name of Driller: Alan Davy

Name of supervising driller

Date Commenced: 6/07/2017

Date Completed: 8/07/2017

Depth Drilled: 63 (m)

Completion Depth: 61 (m)

METHOD OF DRILLING

Other	Auger	Rev. Circ.	Rotary Air	Rotary Mud
☐	☐	☐	☐	☑

Specify:

HOLE DIAMETER			DRILLING FLUID
From (m)	To (m)	Dia. (mm)	Type
0	5.9	275	Air
5.9	63	203	Mud

PARTICULARS OF CASING

From	To	Dia (ID)	Type
+0.1	5.9	209	Steel
+0.7	57	101	PVC
60	61	101mm	PVC

PARTICULARS OF PERFORATIONS OR SCREEN STRINGS

From	To	Dia (ID)	Aperture	Type
57	60	101mm	1mm	Machine slotted PVC

Casing Suspended: Yes ☐ No ☑

Method: Seated

Height of Casing above GL: 0.7 m (m)

Top of Packer Set at: (m)

Length of Packer: (m)

Method of Packer Connection:

CEMENTING/GRAVEL PACKING

From	To	Type
0	5.9	Grout
0	42	Backfill
42	43	Bentonite
43	60	5mm gravel

WATER BEARING BEDS

Depth (m) From	Depth (m) To	Yield (L/s)	SWL (m)	Duration (hr)	Quality	EC	pH	Bottle No.
43	50	1.5	32.72	3				

STRATA / WATER SAMPLES

Have been ☐ Will be ☑

Left at: Darwin

Completion Yield: 1.5 (L/s) Method: Airlift Duration: 3

Completion SWL from 32.72 m Depth of Lift: 61

NOTE: No company advertising is to be imprinted on this certificate apart from where requested.

LOCATION SKETCH OF BORE RN: 040064	LOCATION DESCRIPTION OF BORE		
			m/km
	NW ☐	North ☐	NE ☐
	West ☐		East ☐
	SW ☐	South ☐	SE ☐
	OF:		

FINAL CONSTRUCTION STATUS

Capped	Casing Pulled	Left for Obs.	Abandoned	Equipped	Backfilled	Other
☑	☐	☐	☐	☐	☐	☐

ADDITIONAL INFORMATION ABOUT THE BORE: *(Include any information which may assist for future reference)*

Note: The holder of the NT licence shall submit the form to the Department within 28 days of completion of any works.

I certify that the information contained above is true and correct, and that I have complied with the bore licensing requirements and conditions of the Bore Construction Permit as issued if a Bore Construction Permit was required.

Name and licence number of driller: Alan Davy 157

Signature and licence number of licensed driller: 157 Date: 13/07/2017

FOR OFFICIAL USE ONLY

How Located:	GPS	TST	Survey	Hand Plotted	Other
	☐	☐	☐	☐	☐

DESCRIPTION OF PROPERTY:

Rural	Mineral	Pastoral	Reserve	VCL	Other
☐	☐	☐	☐	☐	☐

Lease No: Lot No: Hundred of:

Portion No: Section No: Town of:

Class of Bore:	Town	Domestic	Investigation	Agriculture	Mineral	Pastoral	Other
	☐	☐	☐	☐	☐	☐	☐
Use of Bore:	**Production**	**Investigation**	**Irrigation**	**Observation**	**Monitoring**	**Roads**	**None**
	☐	☐	☐	☐	☐	☐	☐

Grid Reference: AMG ☐ Clark ☐ Zone: Scale:

Easting: Lattitude: Map Name:

Northing: Longitude: Index Map Number:

Date Registered: Bore Plotted on the map? Yes ☐ No ☐

Dept Officer: Signature:

Remarks: