MINEMAKERS LIMITED
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Operator	Minemakers Australia Pty Ltd
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ABSTRACT

ML 27244 forms part of the Wonarah Phosphate Project (along with EL 24607, EL 29840, EL 29841 and EL 29849), and is located approximately 240km east-southeast of Tennant Creek. Minemakers Australia Pty Ltd is seeking to develop a large sedimentary phosphate deposit within the Georgina Basin. The project area has two principal areas of exploration focus; Main Zone and Arruwurra. The geology of the Main Zone comprises basement granite of Palaeoproterozoic age, unconformably overlain by basalt of the Helen Springs Volcanics. The volcanics are unconformably overlain by dolomitic rocks of the Thorntonia Limestone equivalent in part. The overlying phosphate-bearing Upper Gum Ridge Formation is divided locally into five main units; the Transitional Phosphorite, the Transition Sediments, the Chert Breccia Phosphorite, the Mudstone Phosphorite (main phosphate bearing unit) and the Convolute Mudstone. The Wonarah Formation overlies the Upper Gum Ridge Formation and consists of mudstone, siltstone and sandstone. The geology of Arruwurra is essentially similar with some minor differences. The Mineral Resource estimation for both Main Zone and Arruwurra is 842 Mt at 18.1% P_2O_5 (10% P_2O_5 % cut-off). The resource lies mostly within ML 27244 but extends onto adjacent Minemakers' tenements. During the reporting year various studies were undertaken based on the premise that the development of Wonarah would utilise the JDCPhosphate (JDCP) improved hard process (IHP), which produces superphosphoric acid (SPA) from phosphate rock utilising a ported, rotary kiln. A suite of metallurgical test work was undertaken that satisfactorily determined the optimum liberation size, pulp density, agitation speed and agitation duration for IHP feed stock. Other work included commencement of a prefeasibility study with JDCP into plant and process design for an IHP plant at Wonarah, commencement of a pit optimization algorithm and logistics costings. Rehabilitation of RC, diamond and water search holes was also carried out.

CONTENTS

FIGURES

1. INTRODUCTION

1.1 Location, accessibility, climate and topography

ML 27244 is located 240km east-southeast of Tennant Creek and the nearest town is Camooweal in western Queensland, approximately 180km to the east (Figure 1). The tenement is on the 1:250,000 Alroy, Frew River, Ranken and Avon Downs and the 1:100,000 Wonarah, Joildung, Ranken and Barry Caves map sheets.

Access to the project is via the Barkly Highway, the main paved freight link between Queensland and the Northern Territory, which runs along the northern boundary of ML 27244. Access within the tenement is via a network of dozed tracks suitable for 4WD only.

The topography relief is very gentle and the area is semi-desert with generally sparse tree and shrub cover.

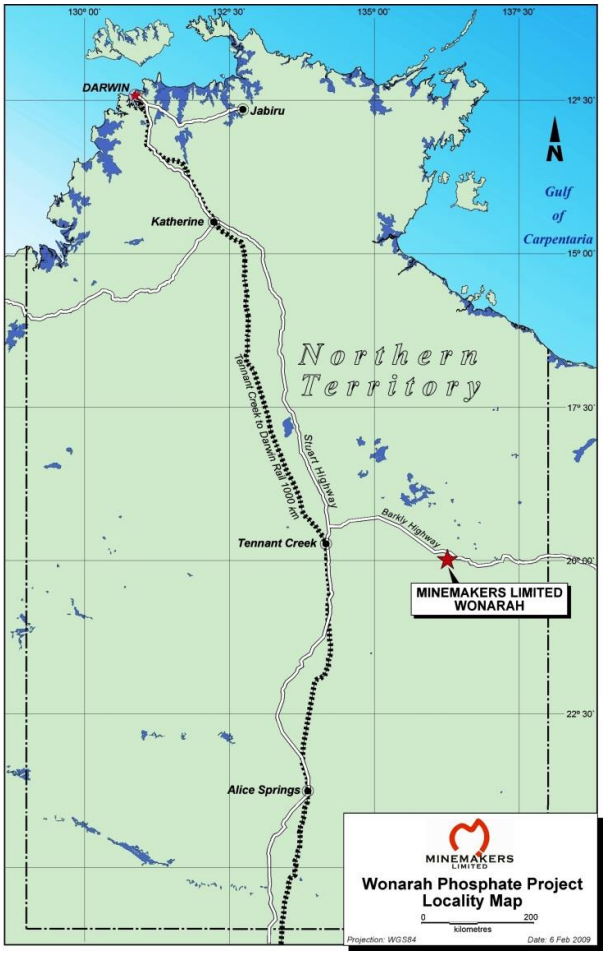

Figure 1. Location of Wonarah Project

1.2 Tenure

ML 27244 forms part of the Wonarah Phosphate Project, covers 10,800 ha, and was applied for on 23 March 2009. The tenement was on granted on 18 February 2010 to Minemakers Australia Pty Ltd (MAPL) for a period of 25 years, expiring on 17 February 2035. The tenement is located on NT Freehold Land (NT Portions 03747-03756) owned by the Arruwurra Aboriginal Corporation.

MAPL has obtained sacred site clearances through the Central Land Council: Sacred Site Clearance Certificate C2008-008, C2008-087, C2009-003 and C2010-032. The tenement is shown in Figure 2.

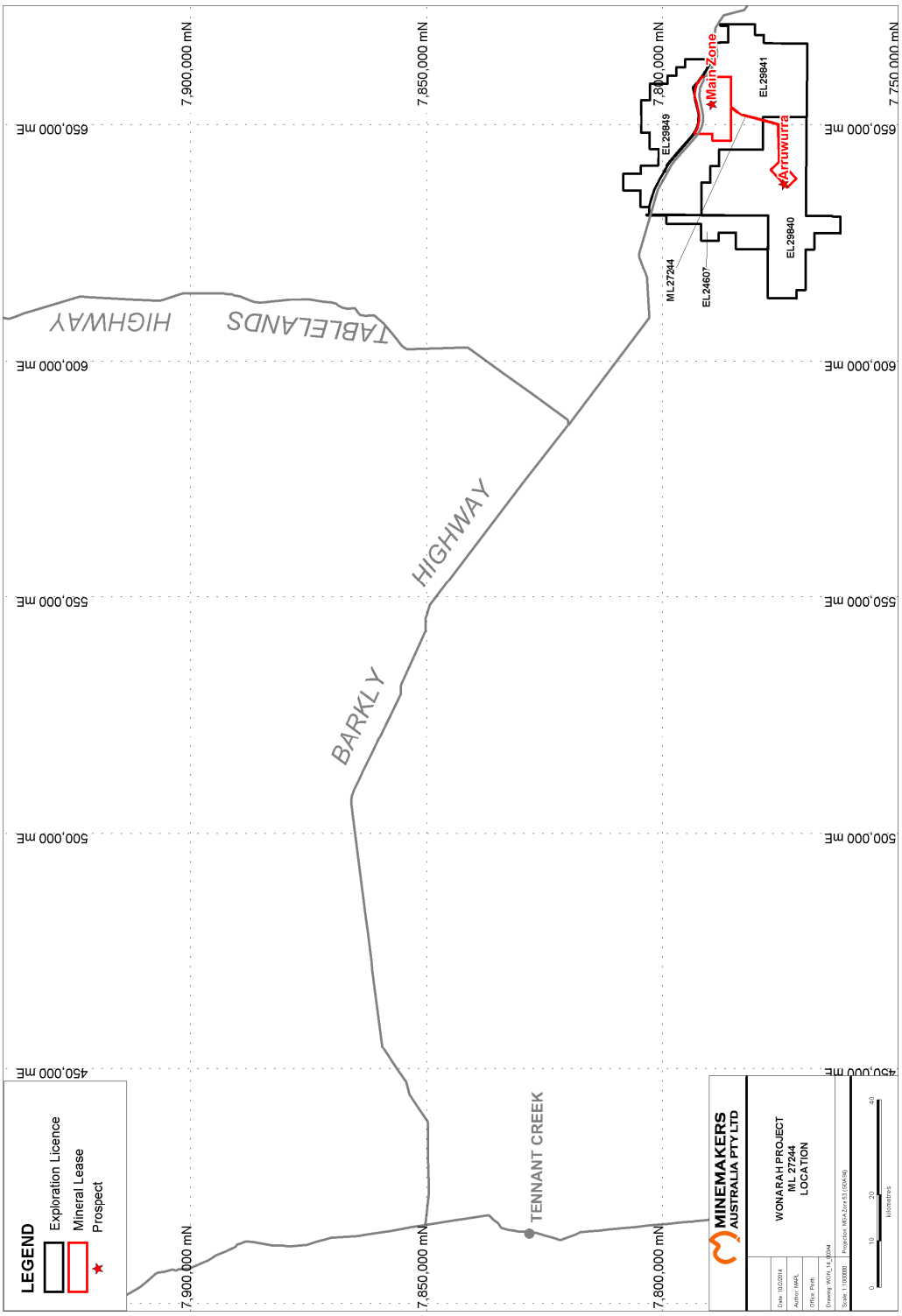

Figure 2. Tenement plan

2. REGIONAL AND LOCAL GEOLOGY

2.1 Deposit style and model

MAPL is seeking to develop a large sedimentary phosphate deposit within the Georgina Basin. The Georgina Basin is an extensive late Proterozoic to early Palaeozoic basin that extends from northwestern Queensland through much of the eastern Northern Territory area and which hosts several large sedimentary phosphate deposits. A map representing the regional geological setting is presented in Figure 3.

Sedimentary phosphate deposits are restricted in their occurrence globally. The model for phosphate deposition requires upwelling, cold phosphate-saturated water depositing phosphate onto the continental shelf where the required narrow pH range is locally present. Co-deposition with carbonate occurs at slightly higher pH values. Carbonate deposition becomes dominant at higher pH. Post-depositional reworking and replacement of carbonate facies by phosphatic mineralisation is probably an important factor in upgrading phosphorite grades to economic levels.

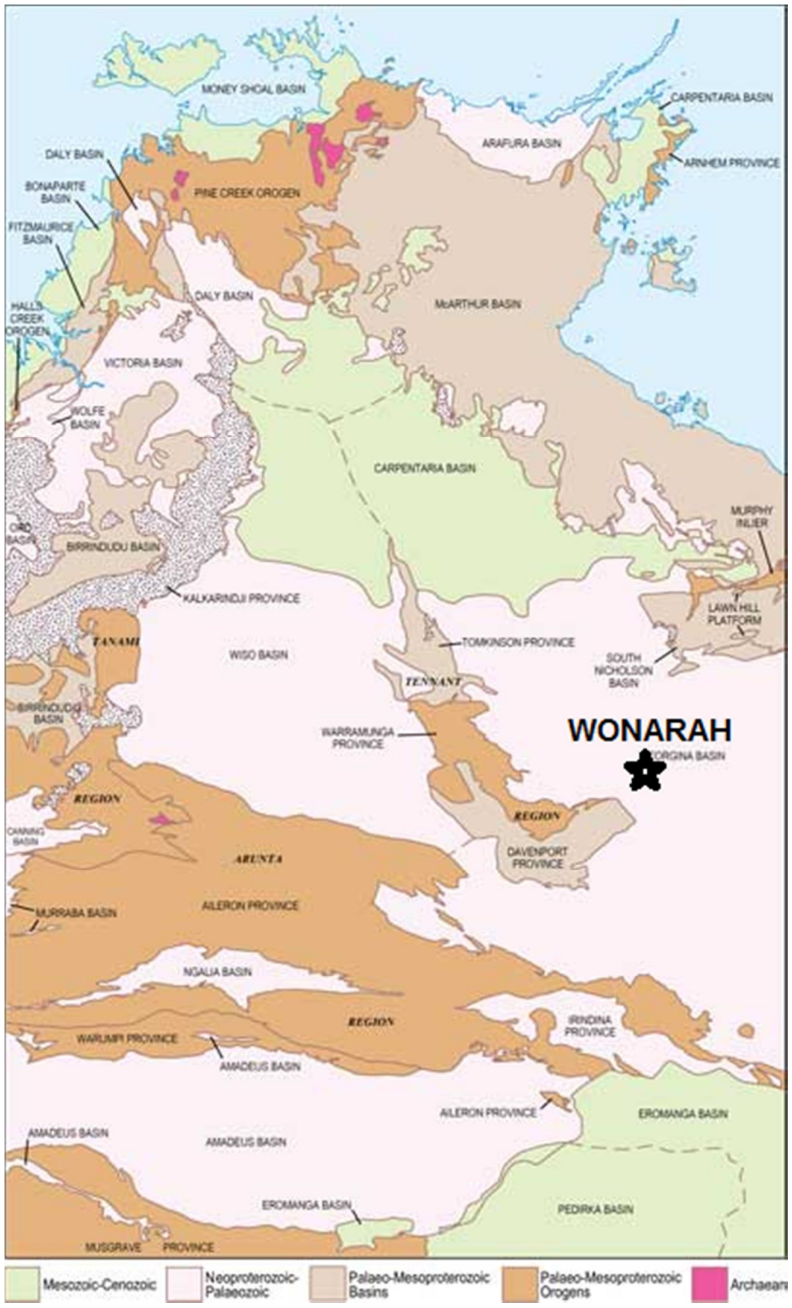

Figure 3. Regional geological setting

2.2 Regional geology

The Wonarah phosphate project is situated in the central western Georgina Basin, a large late Proterozoic to early Palaeozoic basin that extends from northwestern Queensland through much of the eastern Northern Territory.

Basement rocks in this part of the Georgina Basin are comprised of granites of unknown age. They are possibly correlates of the Palaeo-proterozoic rocks of the Tennant Creek region. Mesoproterozoic sediments and volcanics are overlain by the Early Cambrian Helen Springs Volcanics (formerly Peaker Piker Volcanics). A northeast-southwest trending basement high runs through the Wonarah project area.

Overlying Middle Cambrian sediments are divided into two basin-wide sequences. Sequence One deposited clastics, carbonates, organic shales and minor phosphorites during gradual transgression which was abruptly terminated by rapid regression. In the Wonarah region, basement highs are flanked by on lapping dolomitic rocks equivalent to the Thorntonia Limestone. An erosional unconformity is represented by the development of a karst surface.

Sequence Two deposited shallow clastics, carbonates, grainstones, peritidal phosphorites and phosphatic limestones in a transgressive tract system. At Wonarah dolostone, mudstone and phosphorite of the lower Middle Cambrian Upper Gum Ridge Formation overlie Sequence One rocks and basement highs. This formation contains major phosphorite mineralisation and is equivalent to the Beetle Creek Formation on the eastern Margin of the basin which hosts Phosphate Hill and Lady Annie-D-Tree phosphate deposits. The overlying Wonarah Beds are Middle Cambrian mudstone, siltstone and dolostones. Silcrete, ferricrete and calcrete regolith are extensively developed and large areas are covered by stabilised aeolian sand.

2.3 Project Geology

2.3.1 Main Zone

Basement in the Main Zone area is alkali feldspar granite of Palaeo-proterozoic age. Zircons were obtained from the granite and a 207 Pb/206 Pb age of 1838±12 Ma was estimated using LA-ICPMS at the University of Tasmania. Gravity and magnetics indicate that non-granitoid basement is also likely to be present within the licence area. The granite is unconformably overlain by the Helen Springs Volcanics. The top of the basalt is extremely weathered and a ferruginous and manganiferous duricrust is developed locally. Where less weathered, the basalt is vesicular, amygdaloidal and irregularly porphyritic. Dolomitic rocks of the Thorntonia Limestone equivalent are present above the basalt at the southeastern extremity of the Main Zone. To the east and the south the carbonate rocks are developed extensively.

The overlying phosphate-bearing Upper Gum Ridge Formation is divided into five main units: a basal, indurated high grade phosphorite; muddy to sandy, clay-rich transitional sediments; chert breccia phosphorites; a mudstone phosphorite; and a convolute mudstone.

The basal Transitional Phosphorite is a laterally discontinuous high grade indurated phosphorite up to 3m thick developed throughout the eastern and southern part of the Main Zone.

The Transition Sediments (TUN) are laterally continuous, 4-6m thick and comprised of clay-rich mudstone and siltstone with minor phosphorite, dolomite, sandstone and basal epiclastic.

The Chert Breccia Phosphorite forms a distinctive, laterally continuous horizon, 1-10m thick, and comprised of yellow, grey or pink, variably friable or indurated, low to high grade phosphorite with abundant dark grey chert. Chert averages 50-60%.

The Mudstone Phosphorite is the main phosphate-bearing unit at Wonarah and is comprised of 1-10m of yellow and pink mudstone phosphorite with trace to minor dark grey chert. The mineralogy is dominated by (carbonate)-fluorapatite – $Ca_5(PO_4,CO_3)_3F$. The MPH is variably friable or indurated with the indurated phosphorite typically being high to very high grade (30-40% P_2O_5).

The Convolute Mudstone is a 1-10m thick unit of white, light grey and yellow clay-rich variably convolute mudstone with minor siltstone and fine sandstone interbeds. It generally contains minor (<10%) P_2O_5.

The Wonarah Beds overlie the Convolute Mudstone and are comprised of mudstone and siltstone with minor chert, the Hangingwall Mudstone. The Wonarah Beds thicken towards the east and south away from the basement high that defines the western fringe of the Main Zone. Dolomitic units, the Hangingwall Dolostone, are present east and south of the Main Zone.

Regolith is extensively developed throughout the Main Zone with silcrete and ferricrete present in most holes. Low silcrete ridges are prominent features. Colluvial and alluvial deposits are common and extensive stabilised aeolian deposits cover much of the regolith.

The phosphatic units thin and peter out towards the basement high which trends in a northeast-southwest direction towards Arruwurra. To the east and south the phosphatic units, although still present with grade and thickness, are too deep to be of economic interest at this time.

A stratigraphic column and schematic section are presented in Figure 4 and Figure 5, respectively.

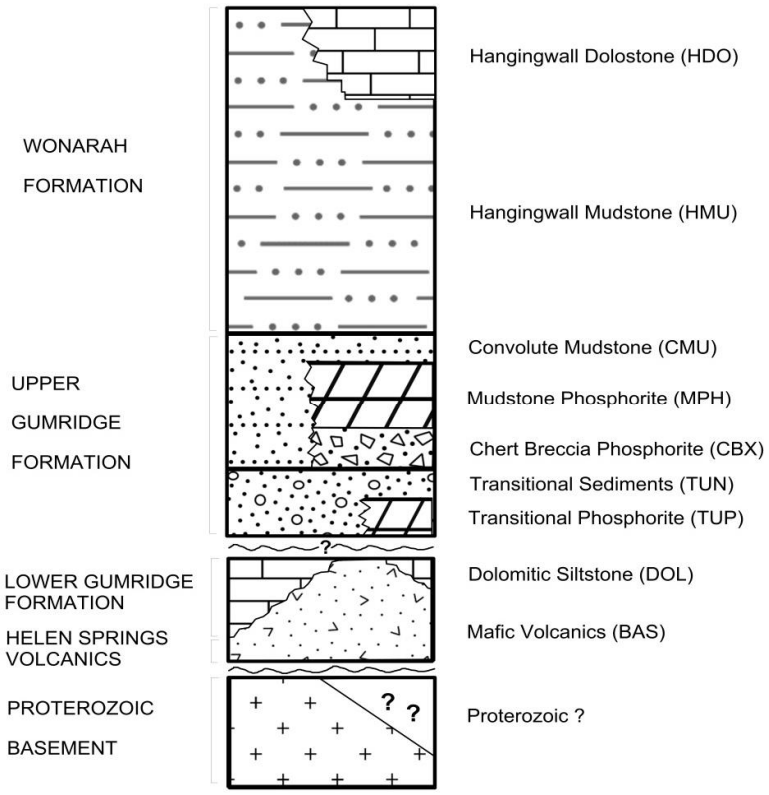

Figure 4. Regional stratigraphic column

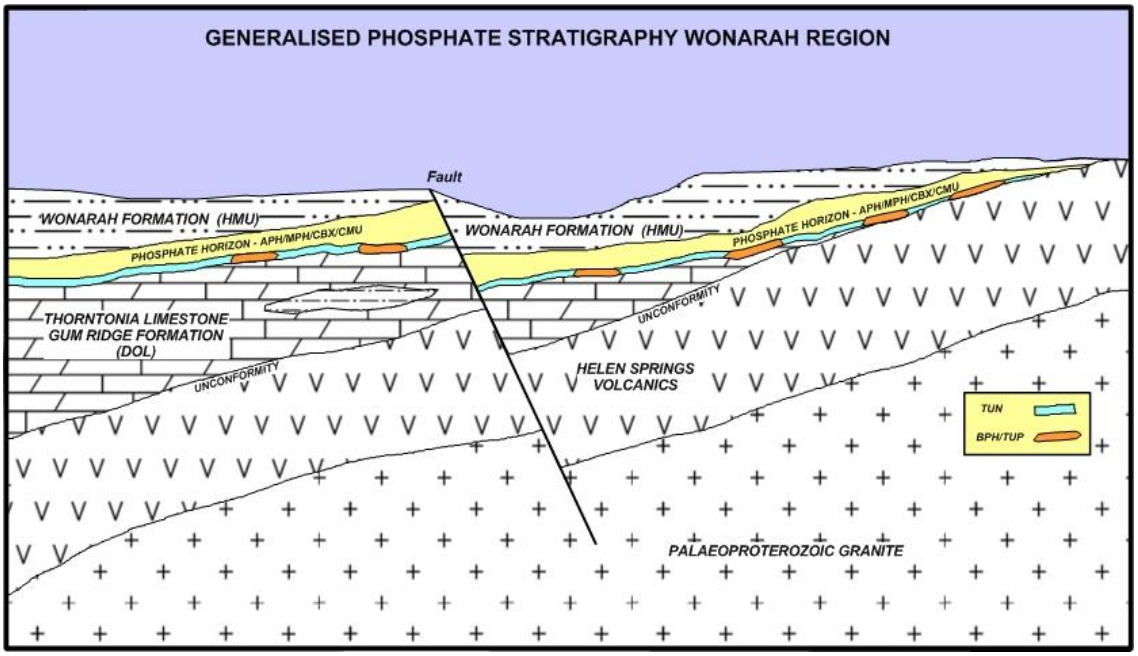

Figure 5. Schematic regional geology section.

2.3.2 Arruwurra

At Arruwurra, the economic phosphate mineralisation occupies a broad northeast-southwest trending shelf sloping gently to the southwest. The shelf drops away sharply at the western end and along the southeastern edge. Mineralisation outcrops in the northeast before petering out against the basement high to the north.

Basement at Arruwurra is similar to the Main Zone and comprised of alkali feldspar granite of possible Palaeo-proterozoic age. This is overlain by the Helen Springs Volcanics which are similar in character to Main Zone. Thorntonia Limestone equivalent dolomites and dolostones overlay the basalt along the southeastern and southern margin of the deposit. An abrupt change in lithology and depth to basalt basement indicates a probable fault which has thrown the deposit side upwards. A karst surface is present on the dolomite.

The Upper Gum Ridge Formation at Arruwurra is somewhat attenuated in comparison to the Main Zone. The stratigraphic equivalent of the high grade Transitional Phosphorite is called the Basal Phosphorite at Arruwurra and is the main unit of economic importance. It is a strongly indurated, very high grade brown phosphorite mudstone which averaged approximately 2m in thickness and is developed throughout the north-eastern part of Arruwurra. The overlying Transitional Sediments are thinner than in the Main Zone and are comprised of 1-3m of mudstone, siltstone and phosphorite. The Chert Breccia Phosphorite is absent at Arruwurra and the overlying Arruwurra Phosphorite (APH) is the stratigraphic equivalent of the Mudstone Phosphorite. The Arruwurra Phosphorite is grey to yellow and is more chert-rich that the Mudstone Phosphorite at the Main Zone. The unit varies in thickness from 1 to 6m and is thickest along a north-east trending axis through the centre of the deposit. The Arruwurra Phosphorite is overlain by and, near surface, interdigitates with a limestone carbonate unit in the northeastern part of the deposit area. Outcropping high grade phosphorites occur in this area.

The Convolute Mudstone is not logged at Arruwurra. The Hangingwall Mudstone unit is similar to the Main Zone except in the far east of Arruwurra where dolomitic and calcareous units, the Hangingwall Dolomite, are present.

Stabilised aeolian sand covers much of the area and is underlain by ferricrete, silcrete, and, above the carbonate unit in the northeast, calcrete and black soil.

3. REVIEW OF PREVIOUS WORK

3.1 Prior ownership

IMC Development Corporation was granted PL 1802 over the Wonarah region on 18 July 1967 covering a total area of 3309 square miles (8570.31km^2) (CR19680030). The tenure converted to PA 2161 Wonarah (CR19690022) on renewal on 12 December 1968 due to conditions governing the expiry and renewal of prospecting Licenses in NT. The area was relinquished and declared Ministerial Reserve No 819 by the Northern Territory Government.

EL1084 was granted to ICI Australia Ltd and Australian Fertilizers Ltd on 8 May 1976 for an area of 410 square miles (1061.9km^2) north and adjacent to the Barkly Highway. The adjacent EL1083, located south of the Barkly Highway, was granted in February 1978 for a total area of 848.5km^2 (CR19780059).

The area to the south of the Ministerial Reserve 819 was taken up by CRA Exploration Pty Ltd (CRAE) and EL3571 was granted on 25 May 1983. The project was abandoned in April 1985.

In September 1997 Rare Earths and Minerals Pty Ltd and Pilbara Chemical Corporation NL applied for four exploration Licenses, covering the Wonarah phosphate deposit and adjacent areas including the former CRAE tenure.

In January 1998 AKD entered into an exclusive option with REM/PCC to acquire the project and subsequently EL 9976 was applied for by AKD Ltd (Australian Kimberley Diamonds N/L, changed to INDO Mines Ltd in 1996) which was granted on 6 February 1998. In March 1999 Rio Tinto Exploration Pty Limited (RTE) entered into a farm-in and joint venture agreement for EL 9976 with Indo Mines (AKD N/L). RTE was the manager of this tenement. EL's 22167 and 22168 were applied for by RTE on 31 August 1999 and granted on 4 August 2000 (CR2001-0280). RTE withdrew from the joint venture in November 2002 due to a determination that the project was NPV negative.

The underlying land tenure is Arruwurra Aboriginal Corporation NT freehold. Tenure information was extracted from the Consultant Geologists' report within the Minemakers Prospectus where reports are not cited.

3.2 Historical exploration

Pre-Minemakers

During the period of 1967 to 1971 IMC Development Corporation drilled 139 vertical rotary-percussion holes within PA2161, accompanied by mapping of photo patterns and soil types, radiometric traverses, analysis of B.M.R. gravity data and radiometric logging of open water bore holes. The drill pattern was spaced at 1 hole per 5.5km^2 with no two holes less than 1.2km apart (CR2000071). IMC described a common phosphorite association within silt-chert, with the main chert concentration located above the phosphorite, and an extensive but non-DSO Phosphorite was defined using the widely spaced drilling pattern. The phosphorite was located at depths of 17 m to 45m and reached a maximum thickness of 18m at the eastern end of the deposit.

Beneficiation studies (CR19690022) were undertaken on 6 samples taken from samples of clayey-siltstone-chert. The study produced a high-grade beneficiated product with an overall BPL recovery of 45-48%. Flotation concentrate of the samples yielded 77.8% BPL, 7.8% Insol, 2.8% total I & A and a CaO/P_2O_5 ratio of 1.32.

Following completion of the 139 open hole rotary percussion series, (total of 18,733ft or 5709.8m) calculations of the phosphorite were reported in CR19700038 as 669 million short tons (606.8Mt) averaging 15.73% P_2O_5, calculated at a cut off average at 10% P_2O_5. A total of 532 million short tons (482.5Mt), using a cut-off of 14% P_2O_5 averaging 16.74% P_2O_5 and 307 million short tons (278.4Mt) averaging 18.98% P_2O_5 indicated using a cut-off average of 18% P_2O_5. Restrictions applied included limitation of phosphorite reserves to 2000ft (6096m) beyond a drill hole on the margins of the deposit.

IMC's second calculation of reserves was made extending the limit of phosphorite to 4000ft (1219m) beyond a hole. Calculations were reported as : at 10%, 14% and at 18% P_2O_5 cut-off reserves were 970 million short tons (879.8Mt) at 15.71% P_2O_5, 771 million short tons (699.3Mt) at 16.46% P_2O_5 and 418 million short tons (379.1Mt) at 18.96% P_2O_5 respectively. Calculations were undertaken using the polygon method, with consideration to the widely spaced drilling. Mining-related limiting factors were not accounted for in the calculations.

At that time, conditions did not allow for an economic deposit.

Between 1976 and 1979, ICI and AFL tenure was marked by problematic re-location of IMC drilling and a rotary percussion drilling program (CR19780059) on the eastern side of the mineralisation, of 10 rotary-percussion holes (9 holes for 514m and a 5m hole abandoned). The program intersected phosphorite at depth, accompanied by drilling difficulties that plagued IMC in the same area. Drilling results indicated a thickening of the phosphorite on the eastern edge of the Wonarah volcanic high and confirmed the depths and phosphate grades, and indicated reasonable continuity of the phosphorite bed over an area of some 6 square kilometres at overburden ratios of less than 7/1" (CR197800007). Results from a 1979 metallurgical investigation were not cited.

In 1983-1984 CRAE carried out a low-level aeromagnetic survey, to define the volcanic basement, however internal review of commodity targets and lack of transport infrastructure closed the project in 1985.

In 1992-1993 the area was explored for diamondiferous diatremes based on airborne magnetic and radiometric surveys. A program of loam sampling was undertaken and in 1993 one hole was drilled to test a ground magnetic anomaly, within EL 9976, which intersected a thin phosphatic claystone unit overlying mafic volcanic.

In January 2000, Rio Tinto Technical Services conducted a Prefeasibility Study using available data, which identified a "global resource estimate of 1955 Mt at 14.4% P_2O_5" (CR20000071), at depths ranging from 30 and 50m, with a maximum assayed grade of 28.6% P_2O_5.

During 2000-2001, RTE drilled three phases of mainly RC holes (120 holes, 6215.5m), minor PAB (2 holes, 130m) and 12 diamond holes for 296.1m core and 368.1m of pre-collar, with accompanied down-hole gamma ray logging. A gravity survey was undertaken to define basement highs, with limited success. The drilling program focused upon ground with no previous drilling and placed a series of closely spaced holes within the well mineralised region in the southern area of the mineralisation identified by IMC, enabling them to define an Inferred Resource.

A 23 square kilometre resource, that mainly excludes the area drilled by IMC, was delineated within mudstone phosphorite, but did not include the underlying lower grade chert breccia phosphorite, which runs poorer lateral continuity. The inferred mineral resource was reported as 115Mt at 22% P_2O_5 at a cut-off grade of 15%.

Following additional infill drilling, a recalculation and delineation of an inferred resource in December 2001 was reported as 72Mt at 23% P_2O_5, at a cut-off of 15%. The drill density and pattern was noted as uneven with some holes up to 1800m apart and the author of the resource report advised caution if this category was to be considered in economic studies.

Rio Tinto carried out beneficiation tests to determine the potential of upgrading the Wonarah ore, based upon tests limited to washing and screening. The deleterious elements were reduced but the process failed to give a major increase in grade.

A combination of reduced estimate size and failure to upgrade the mineralisation economically lowered the projects potential and after RTE initiated a reverse economic study, indicating that the project was then NPV negative, withdrew from the joint venture in 2002.

Exploration also included field work on the outcropping phosphorite beds at Arruwurra, where rock chip sampling indicated that the grade was high but of unknown extent. Joint venture exploration activity also included interpretation of Landsat 5 Thematic Mapping of regolith types, petrological study of core samples and the Arruwurra outcrop and soil sampling.

Historical exploration information was extracted from the Consultant Geologists' report within the Minemakers Prospectus where reports are not cited.

Minemakers

Minemakers commenced field work at Wonarah in February 2008. The majority of drilling carried out on ML27244 was undertaken before the granting of the tenement and is summarise in previous annual reports.

During the year ended January 2009 the following work was carried out:

- 220 reverse circulation percussion holes were completed for 10,500m
- 40 PQ, HQ and NQ sized diamond cored holes were competed for 1,990m
- 4,973 split RC samples were submitted for XRF analysis of major oxide elements
- 109 crushed core samples were submitted for XRF analysis of major oxide elements
- The majority of metres drilled were tested for magnetic susceptibility and gamma radiation by hand-held instruments
- Metallurgical test work was carried out at Optimet Laboratories in Adelaide to determine optimal beneficiation pathways for phosphorite ore
- An airborne EM survey was carried out by Fugro Airborne Surveys Corporation Ontario, with the purpose of providing information that could be used to map the geology and structure of the surveyed area as part of program to delineate potential ground water resources
- A scoping study was commenced and then terminated in December prior to commencement of a full feasibility study

During the year ended January 2010 the following work was carried out:

- 1,066 reverse circulation percussion holes were completed for 52,491m
- 58 PQ and HQ-sized diamond cored holes were competed for 1,326m
- 19,712 split RC samples were submitted for XRF analysis of major oxide elements
- 599 crushed core samples were submitted for XRF analysis of major oxide elements

- The majority of metres drilled were tested for magnetic susceptibility and gamma radiation by hand-held instruments
- A full feasibility study was conducted into mining "direct shipping ore" DSO from the Arruwurra deposit

During the year ended January 2011 the following work was carried out:

- Completion of a full feasibility study into mining at the Arruwurra deposit
- Conversion of the part of SEL 26452 containing the majority of the JORC-compliant resources to ML status
- 100 reverse circulation percussion holes were completed for 4,347m
- 1,462 samples split RC samples were submitted for XRF analysis of major oxide elements
- All RC samples were tested for gamma radiation and a number were tested for magnetic susceptibility
- 20 samples from the mineralised zones (drilled in previous years) were submitted for REE content by ICP-MS
- 92 soil samples were collected for analysis using a proprietary Ionic leach method
- A ground magnetic survey to better define some magnetic anomalies

During the year ended January 2012 the following work was carried out:

- An infill program comprising 6 RC holes for 339m within the central part of Main Zone at 500m spacing for a JORC-compliant Inferred Resource
- Mineral Resource Estimation update at 10% cut-off:
  252Mt @18.2% P_2O_5 Indicated and 395Mt @ 18% P_2O_5 Inferred
- 85 split RC samples were submitted for XRF analysis of major oxide elements
- Portable XRF yttrium sampling of selected intervals
- KEMWorks commissioned to review metallurgical data and test programs conducted at Wonarah, a review of preliminary engineering data completed by Lycopodium and a critique of the mineralogical report by AMMTEC
- KEMWorks commissioned to complete an Enabling Feasibility Study examining two process routes and one plant location and the associated logistics
- Rehabilitation Procedure Manual completed by Coffey Environments Australia
- Coffey Environments Australia commissioned to provide an Exploration Activities Site Audit to satisfy requirements specified in the Exploration Operations Management Plan (EOMP) and to assess the effectiveness of the environmental management of the project
- Environmental disturbance comprised 7 RC holes drilled on pre-existing access tracks and drill pads. The 7 holes were cut off below ground level, capped and buried at the end of the drill season. During the course of the project, 1232 RC holes and 99 diamond holes have been drilled on ML 27244 to date.

During the year ended January 2013 the following work was carried out:

- A regional RC program was carried out to follow up on the good potential demonstrated by the 2010 drilling program in the north-western part of the project area where significant intervals of phosphate were intercepted at shallow depths. Further drilling in the south-western part of the project area, also following up good results from 2010, took place. The majority of the RC program was intended to be carried out in 2011 but this was not possible due to access restrictions

following the severe wet of early 2011. A considerable amount of rehabilitation of older drill sites was carried out during the year. At the end of the year the only unrehabilitated drill sites were from the 2012 drilling. 84 holes were drilled across six tenements for a total of 4001 metres. Relatively close-spaced drilling (~500x500m) in the northwest part of the project area returned extensive shallow but relatively low grade phosphate mineralisation. The best result was WNRC1762 (17m @ 16.53% P_2O_5 from 23m)Drilling on EL26185, EL9979 and EL24607 returned some thick high grade intervals on a wide-spaced (~2000x2000m) grid albeit at greater depths than the Main Zone deposit. The drilling indicated the potential for a very large (>500Mt) medium-high grade phosphate deposit and warrants further drilling. Best results were WNRC1748 (14m @23.3% P_2O_5 from 45m) and WNRC1753 (17m @15.29% P_2O_5 from 44m).

- A metallurgical test work program involving a diamond drilling program of 15 HQ3 holes for 505.7m and 191 assays was designed to recover core for beneficiation test work
- A report by KEMworks detailing assistance with program design and providing oversight and interpretation of results
- An update of the 2011 completed Mineral Resource estimation for Main Zone was completed with a total resource for both Main Zone and Arruwurra now totalling 842 Mt at 18.1% P_2O_5 (10% P_2O_5 % cut-off).

4. WORK COMPLETED DURING THE REPORTING PERIOD

Minemakers planned to carry out drilling and other work on ML 27244 associated with the ongoing Wonarah feasibility study during the 2013 field season. The feasibility work was postponed due to delays in validation of the commercial process planned to be used on phosphate rock at Wonarah, so no exploration work was undertaken on site other than ongoing rehabilitation.

4.1 Rehabilitation

Rehabilitation of several diamond drill hole sumps, water search drill pads and RC drill pads was completed during the year. There are now no drill sites requiring further rehabilitation other than waiting for natural regrowth.

Some work was carried out to improve drainage and minimise erosion around the waste dumps and bulk sample pit.

4.2 Feasibility Study

Summary

Various studies were undertaken during the course of the year based on the premise that development of Wonarah would utilise the JDCPhosphate improved hard process (IHP), which produces super phosphoric acid (SPA) from phosphate rock utilising a ported, rotary kiln.

IHP is a new, patented a process invented by Dr Joe Megy, of JDCPhosphate (JDCP). JDCP have raised funds from five major shareholders including Minemakers who currently holds 7.5% of the issued capital in JDCP. Other participants include Mitsui and Agrifos together with two private equity firms.

The funds raised by JDCP have been used to build a 1/18 scale demonstration plant at Fort Meade in Florida, USA. Construction of the demonstration plant was completed in October 2013 and commissioning commenced in November 2013. The plant has yet to achieve its validation criteria, however progress is being made towards this goal with acid having been produced during a number of hot operating periods.

The IHP technology is of particular interest to Minemakers as it is able to use lower grade phosphate feed with minimal beneficiation. There are however, some critical criteria with regard to the chemical composition of the ore that requires the removal of clay from the Wonarah ore. Therefore, the metallurgical test work program was focused on achieving the required level of clay elimination.

Contemporaneously with the construction of the demonstration plant, the JDCP development team undertook Prefeasibility Study (PFS) level investigations for the design and costing of a commercial scale IHP plant for Wonarah.

Based on the metallurgical test work undertaken for clay reduction, a new algorithm was developed to assist in the optimisation of the open pits to be mined at Wonarah. This work was undertaken by AMC consultants (AMC).

Due to the location of Wonarah, approximately 1,300 km from Darwin, the cost of logistics is significant in terms of the overall economics of the project. Beyond Rail Solutions (BRS) undertook work on more closely defining the cost of each element of the logistics chain.

Metallurgical test work

The three key feed products required for IHP are phosphate ore, silica sand and green petroleum coke. The coke will be imported, however both the phosphate ore and the silica sand will be obtained on site at Wonarah.

In order to provide acceptable feed into an IHP kiln, the alumina level in the feed must be below a specified level. Both Wonarah ore and the overlying silica sand would be unable to achieve this level without some degree of beneficiation. Given that the alumina is principally contained within clays in the ore matrix, comminution followed by attritioning was proposed for the ore.

A suite of test work was undertaken to determine the optimum liberation size, pulp density, agitation speed and agitation duration to determine an optimum treatment regime.

Having determined what was believed to be the optimum operating parameters a range of variability tests were undertaken to confirm that this treatment regime was applicable to the full range of ore types to be treated. These tests were completed with satisfactory results, however a further batch of variability tests are proposed to be undertaken at a later date in order to gather more data points and therefore increase confidence in the universal application of the operating parameters.

With regard to the silica sand, an initial test was undertaken using the optimised ore attrition in process. Whilst this produced totally satisfactory results, further work was undertaken to determine if the required level of clay removal could be achieved with a simpler process requiring less energy. Subsequent test work demonstrated that simple wet screening does achieve the required level of clay removal.

Our metallurgical consultants KEMWorks Inc. (KEMWorks) of the United States, designed, monitored and analysed the results of the metallurgical test work program and their report may be found in Appendix 1.

Earlier test work on comminution assumed a conventional crushing and grinding route. It was subsequently proposed that the Wonarah ore may be amenable to size reduction using high pressure grinding rolls (HPGR). Representative samples of Wonarah ore were dispatched to JK Tech in Queensland for an initial round of testing using HPGR. The results from this first batch of tests showed promising results and a second round is proposed to be undertaken at a later date. Again the work was devised, monitored and analysed by KEMWorks Inc. their report appears as Appendix 2.

IHP Prefeasibility level study

Minemakers entered into an agreement with JDCP to co-fund, on a 50:50 basis a feasibility study, inside battery limits (ISBL) for a commercial scale IHP plant. Targeted output capacity was to be approximately 181,000 t of P_2O_5 per annum from a single production train. The layout of the site would accommodate additional trains (up to five), to be added at a later date.

The study was to be divided into two stages, the first stage being PFS level of accuracy which would later be upgraded to Feasibility Study level once data from the demonstration plant was available.

The PFS level study determined process design, site layout, generated P&ID drawings, identified major equipment items and commenced the process of costing the project. However, as the study was being undertaken by the same team responsible for the construction and commissioning of the demonstration plant, it was decided to suspend work on the PFS to allow the team to focus their attention on commissioning of the demonstration plant. Progress with that commissioning has advanced less quickly than had been hoped and the team have therefore not resumed work on the PFS. As a consequence, no reports on the work undertaken to date are available.

Pit Optimisation Algorithm

Based on the results of the metallurgical test work to remove clay from the ore, a new algorithm was developed in order to better optimise the open pit shells to exclude or blocks whose clay content would exceed that capable of being removed through the beneficiation process. The algorithm was developed with the assistance of KEMWorks and built in to the optimisation model developed for Wonarah by AMC. AMC subsequently ran optimisations using the algorithm. Whilst the results of the optimisation were reported to Minemakers in draft format, further work is required in order to refine the algorithm.

Logistics Costing

Beyond Rail Solutions were engaged to refine details of the operating methodology and costing for transport of major process inputs; principally green petroleum coke, and major output; SPA. This work included engaging with various service providers for road and rail haulage as well as stevedoring to arrive at an operating regime that appeared to best fit the tonnages of material to be moved in the early stages of the project and to determine budget level costing for those activities. One of the contractors was slow to respond to the BRS enquiries and as a consequence, BRS has not yet concluded its work and reported its findings however, an earlier report from BRS is to be found in Appendix 3.

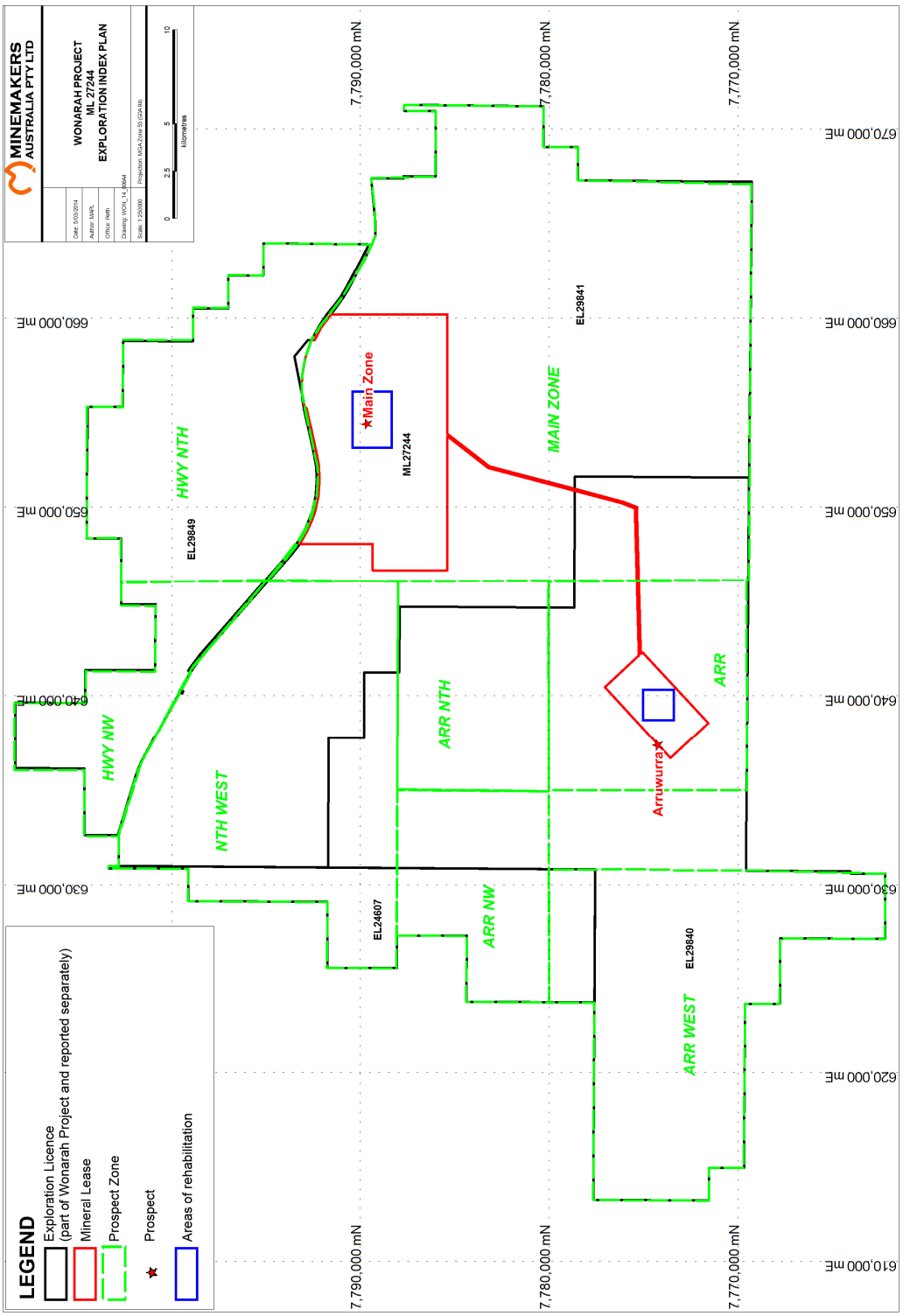

Figure 6. Exploration Index Plan.

5.0 ENVIRONMENT

5.1 Environmental disturbance

Rehabilitation was ongoing during the year. During the course of the project, 1577 RC holes and 114 diamond holes have been drilled. This includes holes drilled on the ML, originally SEL26452. All drill sites have now been capped and buried, had plastics removed and had RC material removed or buried. Sites will now be monitored for natural revegetation, which occurs readily at Wonarah following the wet season. The status of rehabilitation is summarised below (note: 11 holes drilled on non-Minemakers tenements not included in Tables 1-3).

Table 1. Rehabilitation status RC drilling

Rehabilitation Record to End of 2013 – RC	Total	% Complete	Number Remaining
Total RC holes drilled	1577		
Total Pads	1569		
Holes permanently capped and buried to 0.3 Metres	1577	*100.0*	0
Holes with Plastics removed from site	1577	*100.0*	0
Holes with RC material removed or buried	1577	*100.0*	0

Table 2. Rehabilitation status diamond drilling (mainly on ML 27244)

Rehabilitation Record to End of 2013 – Diamond	Total	% Complete	Number Remaining
Total Diamond holes drilled	114		
Total Diamond only Pads	29		
Total sumps excavated	78		
Holes permanently capped and buried to 0.3 Metres	114	*100.0*	0
Sumps filled in	78	*100.0*	0

Table 3. Rehabilitation status water search drilling

Rehabilitation Record to End of 2013 – water search	Total	% Complete	Number Remaining
Total water search RC holes drilled	76		
Total Pads	76		
Holes permanently capped and buried to 0.3 Metres	76	*100.0*	0
Holes with Plastics removed from site	76	*100.0*	0
Holes with RC material removed or buried	76	*100.0*	0

Table 4. Rehabilitation status by tenement (note 11 holes on former or non-Minemakers tenements not included in this table).

Mining Interests (i.e. titles)	ML27244	EL29840	EL29841	EL29849	EL24607
Number of holes drilled	1366	85	186	101	18
Maximum depth of holes (water search holes ~ 150m deep)	150	150	150	150	70
Number of drill pads cleared (Length: 20 x Width: 10 m)	1276	85	184	101	18
Number of sumps cleared (Length: 8 x Width: 8 x Depth: 1m)	77	0	1	0	0
Length of line / track cleared (Kilometres: 790 x Width: 3 m)	301.6	145.6	213.7	163.7	53.4
Number of costeans excavated (Length: x Width: x Depth: m)	NA	NA	NA	NA	NA
Total bulk sample pits excavated (Length: x Width: x Depth: m)	NA	NA	NA	NA	NA
Camp area/s cleared	NA	NA	NA	NA	NA
Total area disturbed (hectares)	119.1	45.5	67.9	51.1	16.4
Drill holes capped / plugged	1366	85	186	101	18
Total area rehabilitated (hectares)	103.4	28.4	24.5	2.0	8.3

Rehabilitation services were carried out by TGS Indigenous Mining Services, a company wholly-owned by a traditional owner. Services provided by TGSIMS proved to be excellent and during the year all outstanding RC disturbances were rehabilitated. TGSIMS supplied and operated a 1.7t rubber-tracked excavator (transportable by trailer) for cleaning up RC sites, including burial of RC material, and other smaller rehabilitation jobs. The machine has a very low impact on the environment and is able to access old tracks with vegetation regrowth with a minimum of damage. For damaged access tracks TGSIMS use a 5.5t Kubota excavator, with blade, and a 12-tonne Kenworth tipper.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Feasibility

Feasibility study work was carried out with satisfactory results. Beneficiation test work undertaken to determine the optimum liberation size, pulp density, agitation speed and agitation duration to determine an optimum treatment regime for IHP feedstock was completed successfully. Promising results were obtained from high pressure grind roll (HPGR) testing leading to a proposal for a second round of tests. HPGR may replace conventional crush and grind if further test work is satisfactory.

Work also commenced, with JDCP, on plant and process design for an IHP plant at Wonarah as well as development of a pit optimization algorithm and transport logistics costings.

For the 2014 reporting year, it is proposed to carry out a geotechnical program to test the site of proposed infrastructure for an IHP phosphate beneficiation plant. The timing of this work will be determined by progress in validating IHP technology at the JDC commercial demonstration plant in Florida. The work will be comprised of:

- 40 diamond drill holes to a depth of 20 metres
- 22 test pits to be excavated by small excavator or backhoe with dimensions of 4m (length), 1m (width) x 3m (depth).
- 8.5 km of tracks to be constructed for access to pits and diamond holes using loader or small excavator with blade

6.2 Environmental rehabilitation

All RC exploration holes have now been rehabilitated. It is now standard operating practice to temporarily cap RC and diamond holes and then permanently cap and bury collars to 0.4m within a week of completion of drilling.

All plastics associated with RC drilling have been removed.

All diamond sumps have been filled in and it is standard practice to do this immediately on completion of drilling.

During the year a few sites that were used for water search drilling in 2009 were tidied up and rehabilitation finalised.

Photography of drill sites and tracks is ongoing.

7. REFERENCES

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APPENDIX 1
KEMWorks optimum treatment regime test work - various papers.

APPENDIX 2
JK Tech HPGR interim results

APPENDIX 3
BRS Review of logistics costs