



ASX ANNOUNCEMENT 16 NOVEMBER 2011

**DUBBO ZIRCONIA PROJECT
ORE RESERVE UPGRADE**

➤ **DUBBO ZIRCONIA PROJECT (DZP)**

- **The DZP in New South Wales will have strategic significance as a long term supplier of zirconium and heavy rare earth products when it begins production in 2014.**
- **Ore reserves for the Toongi deposit have been revised, as are the capital and operating costs and revenue from the proposed 1Mtpa operation.**
- **Proved and Probable Ore Reserves now total:**
35.9 million tonnes of ore grading 1.93% ZrO₂, 0.04% HfO₂, 0.46% Nb₂O₅, 0.03% Ta₂O₅, 0.14% Y₂O₃, 0.74% REO (0.9% TREO).
- **These ore reserves will support an initial 36 year open pit life at 1Mtpa production, in contrast to the feasibility study which is based on a 20 year cash flow to indicate a \$1.2 billion NPV.**
- **The revised 1Mtpa project financial assessment remains on schedule for completion early in 2012.**
- **Deep diamond core testing of the Toongi deposit and RC drilling of the nearby and previously untested Railway deposit have been scheduled for early 2012.**
- **These drilling programs could significantly expand the resource potential of the project.**
- **Negotiations are continuing with a number of parties expressing interest in signing MOUs for the heavy rare earth concentrate and the light rare earth concentrate.**
- **All of the zirconium and niobium products have now been committed through MOUs which account for 61% of the revenue for the 1Mtpa.**

Corporate Profile

Alkane Board

J S F Dunlop (Chairman)

D I Chalmers (Managing Director)

A D Lethlean (Director)

I J Gandel (Director)

L A Colless (Joint Secretary)

K E Brown (Joint Secretary)

Contact

Ian Chalmers

Managing Director

Email: ichalmers@alkane.com.au

12 month share price range

A\$0.65 – A\$2.73

Market Cap 15 Nov 2011

~A\$300 million

ASX Code: ALK

269 million shares

OTCQX Code: ANLKY

ADR ratio 1:10

30 September 2011 Cash

Cash ~A \$13.2 million

No debt

Senior Management

Terry Ransted – Chief Geologist

Mike Sutherland – GM NSW

Tony Wright – Commercial Manager

Alister MacDonald – DZP Marketing

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The Dubbo Zirconia Project (DZP) is located 30 kilometres south of the large regional centre of Dubbo (Figure 1) in the Central West Region of New South Wales. The DZP is based upon one of the world's largest known in-ground resources of the metals **zirconium, hafnium, niobium, tantalum, yttrium, and rare earth elements**. Over several years the Company has developed a flow sheet consisting of sulphuric acid leach followed by solvent extraction recovery and refining to produce several products.

The **Demonstration Pilot Plant (DPP)** has been operating at the laboratory facilities of **ANSTO Minerals** at Lucas Heights south of Sydney since May 2008 and to date has recovered substantial quantities of zirconium products and niobium concentrate. The DPP has continued to operate for short periods to trial engineering and process innovations, and has also demonstrated recovery of an yttrium rich heavy rare earth concentrate and a light rare earth concentrate.

As documented in the ASX announcement of 19 September 2011, the Project has demonstrated robust financial returns. While resources identified to date will permit the project to produce for over 100 years, the feasibility study estimated an EBITDA of A\$6 billion and an NPV of A\$1.2 billion based on an initial 20 year mine life. The DZP is a significant and strategic source of zirconium and heavy rare earths.

The Project remains on track for first production in 2014.

Geology and Mineral Resources

The **Toongi** deposit hosting the mineralisation is a sub-volcanic vertical intrusive trachyte body with dimensions of approximately 900 metres by 600 metres (Figure 2). It forms part of a broader alkaline volcanic complex comprising lava flows and domes, tuff sheets and rarer intrusive bodies. Only the nearby **Railway** deposit (Figure 3) located about 3 kilometres to the north of Toongi rail siding and the planned treatment plant site, contains elevated zirconium, niobium and rare earth similar to Toongi. Limited surface rock sampling averaged **8960ppm ZrO₂; 2324ppm Nb₂O₅; 146ppm Ta₂O₅; 728ppm Y₂O₃; 453ppm La₂O₃; 1811ppm Ce₂O₃; 305ppm Nd₂O₃; and 111ppm Dy₂O₃** which are approximately 50% of the drilled grade of the Toongi deposit. The apparent surface area of the Railway deposit is larger than Toongi.

The Toongi deposit was drilled in 2000 – 2001 to 55 metres depth to generate a Measured Resource and several holes were completed to 100 metres depth to establish an additional Inferred Resource (Table 1).

The deposit contains several unusual mineral species and the flow sheet developed to produce the suite of marketable products is specific to the deposit.

Table 1. Identified Mineral Resources

Toongi Deposit	Tonnage (Mt)	ZrO₂ (%)	HfO₂ (%)	Nb₂O₅ (%)	Ta₂O₅ (%)	Y₂O₃ (%)	REO (%)
Measured	35.7	1.94	0.04	0.46	0.03	0.14	0.74
Inferred	37.5	1.95	0.04	0.46	0.03	0.14	0.75
TOTAL	73.2	1.95	0.04	0.46	0.03	0.14	0.75

These Mineral Resources are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The full details of methodology were given in the 2004 Annual Report.

Ore Reserves

As part of the definitive feasibility study completed by TZMI in September (ASX Announcement 19 September 2011) in pit reserves to be extracted for the 400,000 tonne per annum processing schedule were calculated at a cut-off value of ore which equates to the total operating costs for mining, processing, maintenance and administration as estimated in the September 2011 study. The dollar value of ore was calculated based on the estimated revenue for each of the zirconium, niobium and rare earth products and



takes into account variable recoveries and variable sales revenue for each product. These total revenue values for each product are then equated to a value per percentage unit¹. The waste to ore ratio for this initial pit assessment was 0.17:1.

The feasibility study is currently being reviewed for the proposed 1 million tonne per annum operation and although the financial model is based on a twenty year project life, the same costs and revenue² parameters were used to estimate a global ore reserve within the defined measured resource outline. 100% of the measured resource reports to a probable reserve totalling:

Table 2. Revised Ore Reserves

Toongi Deposit	Tonnage (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	REO (%)
Proved	8.07	1.92	0.04	0.46	0.03	0.14	0.75
Probable	27.86	1.93	0.04	0.46	0.03	0.14	0.74
TOTAL	35.93	1.93	0.04	0.46	0.03	0.14	0.74

These Ore Reserves are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The reserves were calculated at a 1.5% combined ZrO₂+Nb₂O₅+Y₂O₃+REO cut off using costs and revenues defined in the notes below. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears

Notes:

- ¹ Estimated total annual revenue from product sales is approximately \$500M or \$500 per tonne of ore processed. Given a life of mine average grade for ZrO₂ of 1.93%, 0.46% Nb₂O₅, 0.88% Y₂O₃ + REO, the in ground value of each percent of ZrO₂+Nb₂O₅+YREO is approximately \$154.
- ² Parameters used for reserve calculation:
 - the mineral resource model used in the conversion to reserves has been well documented previously and totals 35.7 million tonnes grading 1.94% ZrO₂, 0.04% HfO₂, 0.46% Nb₂O₅, 0.03% Ta₂O₅, 0.14% Y₂O₃, 0.745% REO using a 1% ZrO₂ cut-off;
 - costs and revenue used in the conversion of reserves were calculated for a comprehensive feasibility study completed over a number of years;
 - reserves were calculated by applying the lerch grossman pit optimisation program to the resource model. The reserve figure was based on a 1.50% combined ZrO₂ + Nb₂O₅+Y₂O₃+REO;
 - mining is by conventional drill and blast, and load, haul and dump operation with grade control from blast hole drilling. Due to the bulk mining of the ore (i.e. no selective mining required) no ore dilution factors have been applied, there are no minimum mining widths and 100% mining recovery is assumed. The ore body is geotechnically very sound and the pit parameters have been set at an overall pit slope of 40°. Apart from the removal of topsoil there is no pre-stripping requirement;
 - the metallurgical process will be via sulphation roasting and leach. The process has been exhaustively tested at a pilot plant which has been in operation at ANSTO since 2008;
 - metallurgical recoveries are variable for each recovered product and these have been incorporated in the revenue assessment;



- operating costs were assessed as part of the feasibility study completed in September 2011;
- extensive marketing studies have been undertaken for all products and revenue reflects these studies and the type of product being generated. Due to the variability of product being recovered and the variability in recovery for individual products ore grades were converted to recovered dollar values for the ore reserve assessment.

The ore outcrops at surface, so apart from pit edge batters (Figure 2) there is little waste to be handled, resulting in a waste to ore ratio of 0.26:1. The base of the pit will be approximately 45 metres below the current top of the hill.

Project Development

As a result of the 1 million tonne per annum development review with an anticipated completion early in 2012, a deep diamond core hole to approximately 300 metres has been planned to test the Toongi mineralisation for continuity and style of that mineralisation.

Also four or five RC drill holes will be targeted to test the potential of the Railway deposit to host Toongi style mineralisation. These drilling programs have the potential to increase the overall total resource base for the DZP.

Based upon the 1Mtpa project, the product outputs derived from DPP mass balances, overall recovery from ore to finished products were estimated to be 82% for zirconium 66% for niobium and an average of 45% for REE are tabled below. There remains significant potential to improve the rare earth circuit and overall recoveries of individual rare earths within the concentrates. **Recent test work has already demonstrated improved heavy rare earth recoveries, and this work will continue in parallel with the project development program in the first half of 2012.**

Table 3 Planned Production Output

DUBBO ZIRCONIA PROJECT		
Production Outputs		
Product	Revenue	1,000,000tpa
ZBS, ZOH, ZOC, ZrO ₂	39%	15,700 tpa ZrO ₂
Nb -Ta concentrate / FeNb	22%	3,005 tpa Nb ₂ O ₅
LREE concentrate	21%	3,050 tpa REOs
YHREE concentrate	18%	1,120 tpa REOs
ZBS = zirconium basic sulphate; ZOH = zirconium hydroxide; ZOC = zirconium oxychloride; ZrO ₂ = zirconia ; Equivalent ~99% ZrO ₂ + HfO ₂ basis. Nb-Ta concentrate = ~70% Nb ₂ O ₅ ; 1.0% Ta ₂ O ₅ calcined basis. FeNb = 70% Nb LREE = Lanthanum, cerium, neodymium and praseodymium. YHREE = yttrium, gadolinium, dysprosium and terbium.		

Competent Person

Unless otherwise advised, the information in this report that relates to exploration results, mineral resources and ore reserves is based on information compiled by Mr D I Chalmers, FAusIMM, FAIG, (director of the Company) who has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Chalmers consents to the inclusion in this report of the matters based on his information in the form and context in which it appears



Disclaimer

This report contains certain forward looking statements and forecasts, including possible or assumed reserves and resources, production levels and rates, costs, prices, future performance or potential growth of Alkane Resources Ltd, industry growth or other trend projections. Such statements are not a guarantee of future performance and involve unknown risks and uncertainties, as well as other factors which are beyond the control of Alkane Resources Ltd. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. Nothing in this report should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities.

BACKGROUND

Alkane is a multi commodity explorer and miner with its operations focused in the **Central West of New South Wales**, about 400 kilometres northwest of Sydney. Over several years, including experience in developing the Peak Hill Gold Mine, Alkane has built a substantial resource base and is proceeding towards several developments:

- the **Tomingley Gold Project** which currently has a **660,000 ounce gold resource** within the **Wyoming and Caloma deposits** (full details are in the 2008 Annual Report and the ASX announcements of 2 October and 16 December 2009). A feasibility study for the development of the project with potential 50,000 to 60,000 ounce per annum production was completed in late 2010 and development financing options are well advanced;
- near **Orange**, the Company has a joint venture (**ODEJV**) with Newmont, one of the world's largest gold miners, which resulted in the discovery in 2006 of a significant gold deposit at **McPhillamys** within the **Moorilda Project**. An initial resource of Indicated plus Inferred resources containing **2.96 million ounces of gold and 60,000 tonnes of copper** has been defined (full details ASX announcement of 5 July 2010). Newmont has elected to complete a Bankable Feasibility Study for the development of the deposit;
- elsewhere within the region, at Galwadgere within the Wellington Project, Alkane has defined a 2 million tonne 1.00% copper Indicated Resource (details 2005 Annual Report) which is being reviewed for its development potential. Several other advanced exploration projects with encouraging drill intercepts and early exploration targets have been identified at other locations.
- In **Western Australia** the Company holds a diluting 21% residual interest in a nickel sulphide joint venture with **Xstrata Nickel (Jubilee)** near **Leinster**.





Mineral Resource and Ore Reserve Statement November 2011

Dubbo Zirconia Project – Mineral Resources

Toongi Deposit	Tonnage (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	REO (%)	U ₃ O ₈ (%)
Measured	35.70	1.94	0.04	0.46	0.03	0.14	0.75	0.014
Inferred	37.50	1.95	0.04	0.46	0.03	0.14	0.75	0.014
TOTAL	73.20	1.95	0.04	0.46	0.03	0.14	0.75	0.014

These Mineral Resources are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The full details of methodology were given in the 2004 Annual Report.

Dubbo Zirconia Project – Ore Reserves

Toongi Deposit	Tonnage (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	REO (%)
Proved	8.07	1.91	0.04	0.46	0.03	0.14	0.75
Probable	27.86	1.93	0.04	0.46	0.03	0.14	0.74
Total	35.93	1.93	0.04	0.46	0.03	0.14	0.74

These Ore Reserves are based upon information compiled by Mr Terry Ransted MAusIMM (Alkane Chief Geologist) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The reserves were calculated at a 1.5% combined ZrO₂+Nb₂O₅+Y₂O₃+REO cut off using costs and revenues defined in the notes in ASX Announcement of 16 November 2011. Terry Ransted consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Tomingley Gold Project – Mineral Resources

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		Gold (koz)
Top Cut 2.5x2.5x5.0m model	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	
Wyoming One	2,227,000	2.07	882,000	2.25	3,478,000	1.62	6,587,000	1.86	393.2
Wyoming Three	630,000	1.87	58,000	1.73	154,000	1.25	842,000	1.75	47.3
Caloma	2,047,750	2.04	440,050	1.71	1,371,620	1.36	3,859,420	1.76	218.5
Total	4,904,750	2.03	1,380,050	2.06	5,003,620	1.54	11,288,420	1.82	658.9

These Mineral Resources are based upon information compiled by Mr Richard Lewis MAusIMM (Lewis Mineral Resource Consultants Pty Ltd) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Richard Lewis consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The full details of methodology are given in the ASX Report dated 25 March 2009 and 2 October 2009.

Tomingley Gold Project – Ore Reserves

DEPOSIT	PROVED		PROBABLE		TOTAL		Ounces (minable)
	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	Tonnage (t)	Grade (g/t)	
Wyoming One	1,700,000	1.6	200,000	1.3	1,900,000	1.6	94,500
Wyoming Three	500,000	1.6	0	0.0	500,000	1.6	28,100
Caloma	1,100,000	2.3	100,000	1.7	1,200,000	2.2	86,500
Total	3,300,000	1.8	300,000	1.5	3,600,000	1.8	209,100

These Ore Reserves are based upon information compiled under the guidance of Mr Dean Basile MAusIMM (Mining One Pty Ltd) who is a competent person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Reserves and Resources are estimated at an effective A\$1,540 per ounce gold price. Dean Basile consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Peak Hill Gold Mine – Mineral Resources

DEPOSIT	MEASURED		INDICATED		INFERRED		TOTAL		k oz
0.5g/t gold cut off	Tonnage (t)	Grade (g/t)							
Proprietary			9,440,000	1.35	1,830,000	0.98	11,270,000	1.29	467.4
3.0g/t gold cut off	Tonnage (t)	Grade (g/t)	k oz						
Proprietary					810,000	4.40	810,000	4.40	114.6

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Wellington – Galwadgere – Mineral Resources

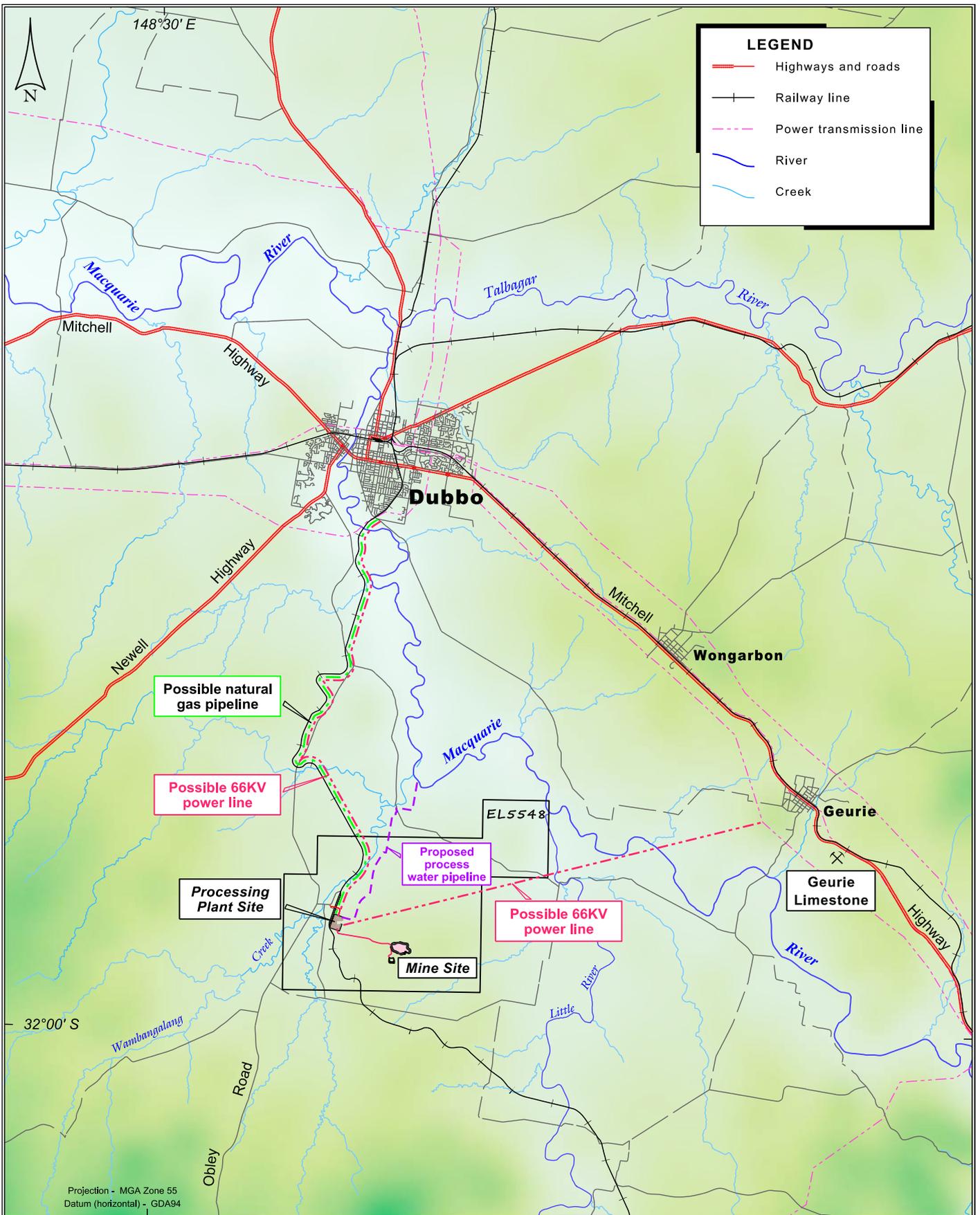
DEPOSIT	MEASURED		INDICATED		Grade (g/t)
0.5% Cu cut off	Tonnage (t)	Grade (% Cu)	Grade (g/t)	Tonnage (t)	Grade (% Cu)
Galwadgere	-	-	-	2,090,000	0.99

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Moorilda – McPhillamys (ODEJV) – Mineral Resources

DEPOSIT	INDICATED			INFERRED			TOTAL			k oz gold	tonnes copper
McPhillamys 0.3g/t Au cut-off	Tonnage (t)	Grade (g/t)	Grade % Cu	Tonnage (t)	Grade (g/t)	Grade % Cu	Tonnage (t)	Grade (g/t)	Grade % Cu		
Inner Ore Zone	51,650,000	1.10	0.07	23,504,000	1.19	0.07	75,154,000	1.13	0.07	2,723.6	55,091
Outer Ore Envelope	9,624,000	0.44	0.04	7,167,000	0.43	0.03	16,791,000	0.43	0.03	234.7	5,729
Total	61,274,000	0.99	0.07	30,671,000	1.01	0.06	91,945,000	1.00	0.07	2,958.3	60,820

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Projection - MGA Zone 55
Datum (horizontal) - GDA94



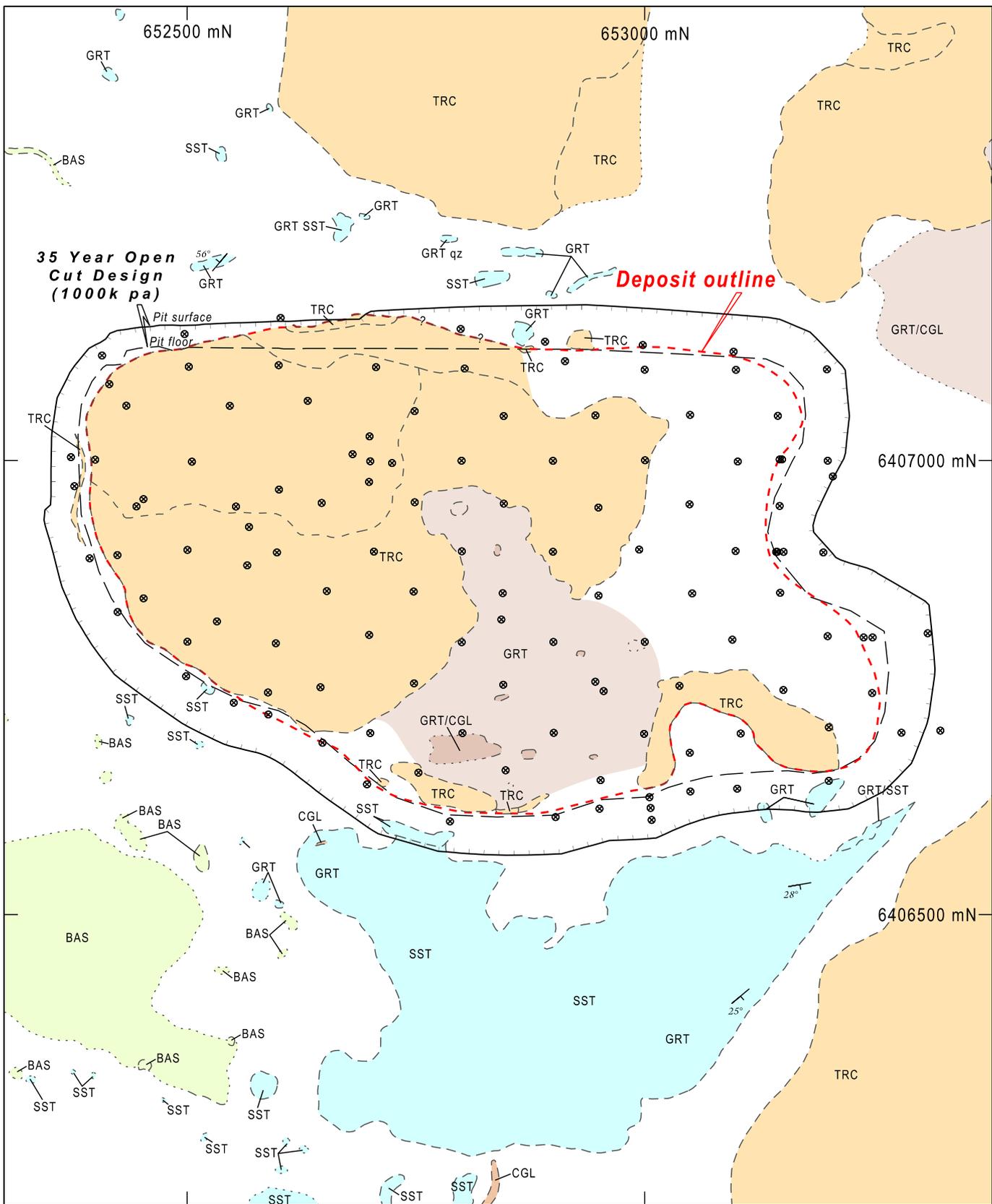
AUSTRALIAN ZIRCONIA LTD
(A SUBSIDIARY OF ALKANE RESOURCES LTD)

Dubbo Zirconia Project
New South Wales

Infrastructure

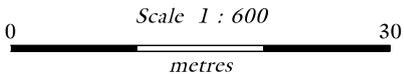


Figure: 1



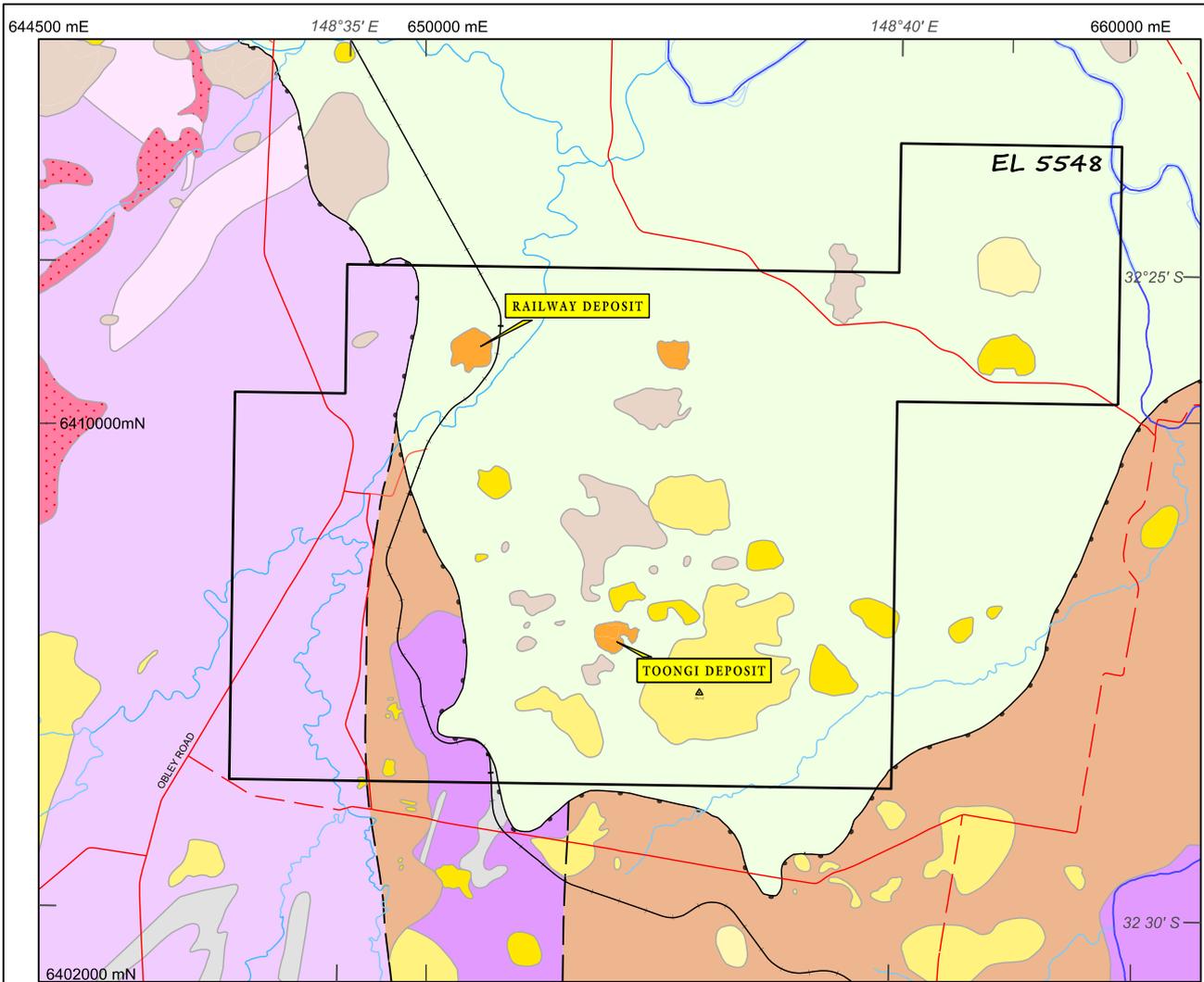
Principal Lithologies

- CGL** COBBLE CONGLOMERATE: Variably lithified polymictic conglomerate. Probably only occurs as colluvial valley fill.
 - GRT** FERRUGINOUS GRIT: Poorly outcropping, rarely crudely bedded gritty to gravelly angular fragments in highly ferruginous gritty matrix
 - TRC** TRACHYTE: Fine - medium grained altered trachyte. Intrusive contacts have a narrow zone of chalcedonic silica veining and minor silicification
 - BAS** BASALT: Fine to medium grained, weakly to moderately magnetic dark grey - black basalt. Occasionally vesicular. Minor tufts.
 - GRT/SST** NAPPERBY FORMATION: Grits and feldspathic sandstone
- ⊗ Drill hole location



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 DUBBO ZIRCONIA PROJECT
 NEW SOUTH WALES
Toongi Deposit
Deposit Outcrop Geology
 with 35 Year Pit

Figure No. : 2



GEOLOGICAL LEGEND

- | | | | | | |
|---------------------|--|---|-------------------------|---------------------|-------------|
| TERTIARY + JURASSIC | | Tholeiites, alkali basalts | Cultural Symbols | | Road |
| | | Trachytic complexes | | | Gravel road |
| JURASSIC | | Intrusive trachyte | | Railway track | |
| | | Dominantly extensive trachyte | | Major River | |
| | | Intrusive syenite | | Minor river / creek | |
| TRIASSIC | | GUNNEDAH BASIN
Napperby Formation | | | |
| | | Unconformity | | | |
| DEVONIAN | | HYANDRA CREEK GROUP - mixed sedimentary and volcanic formations | | | |
| | | YEOVAL BATHOLITH | | | |
| | | Mafic - intermediate intrusives | | | |
| | | GREGRA GROUP
mixed sedimentary and volcanic rocks | | | |
| SILURIAN | | TOONGI GROUP - mixed sedimentary and volcanic formation | | | |
| | | CUDAL GROUP - mixed sedimentary formations | | | |

Coordinates & Projection:
MGA Zone 55 GDA94

Scale 1 : 100 000



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(A SUBSIDIARY OF ALKANE EXPLORATION LTD)

Dubbo Zirconia Project
New South Wales

Geological Interpretation