



Archer Exploration Limited

“Focused on the critical few”

SAREIC Conference
Adelaide 2-3rd May 2011

Gerard Anderson Managing Director



Disclaimer

Competent persons statement

The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr. Wade Bollenhagen, Exploration Manager of Archer Exploration Limited. Mr. Bollenhagen is a Member of the Australasian Institute of Mining and Metallurgy who has more than fifteen years experience in the field of activity being reported. Mr. Bollenhagen consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Forward looking statements

The information in this presentation is published to inform you about Archer Exploration Limited and its activities. Some statements in this presentation regarding estimates or future events are forward looking statements.

Although Archer Exploration Limited believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results and outcomes will be consistent with these forward-looking statements.



Corporate

ASX Code

AXE

Shares on Issue	64,428,477
Share price at 29/4/2011	\$0.175
Market Capitalisation	\$11.3 million
Cash at Bank as at 31/3/2011	\$2.92 million

Directors

Chairman	Greg English
Non – Executive Directors	Tom Phillips
	Alice McLeary
	Hon. John Dawkins
	Peter Meers



Mineral Exposure	
• Graphite	• Uranium
• Magnesite/magnesia	• Phosphate
• Manganese ± REE	• Iron Ore
• Gold	• Coal
• Copper ± IOCG	• Barite

The limited number of shares on issue and commodity exposure offers shareholders considerable leverage as exploration advances and deposits mature

Tenement Position

Exploration Tenements

- 100% of 18 tenements covering 9,042 km² over Eyre Peninsula, Leigh Creek, West Roxby, Burra and World's End areas.
- 100% of 3 ELA's covering 1,513 km².

100% Sugarloaf Graphite Deposit

Exploration potential 9-20Mt* of highly graphitic schist.

413Mt JORC Magnesite Resource

JORC Measured, Indicated and Inferred Resources at Leigh Creek of 413Mt grading 41.3% MgO. *(Source MDL 2001 Report)*

7 Wholly Owned Manganese Prospects and Deposits

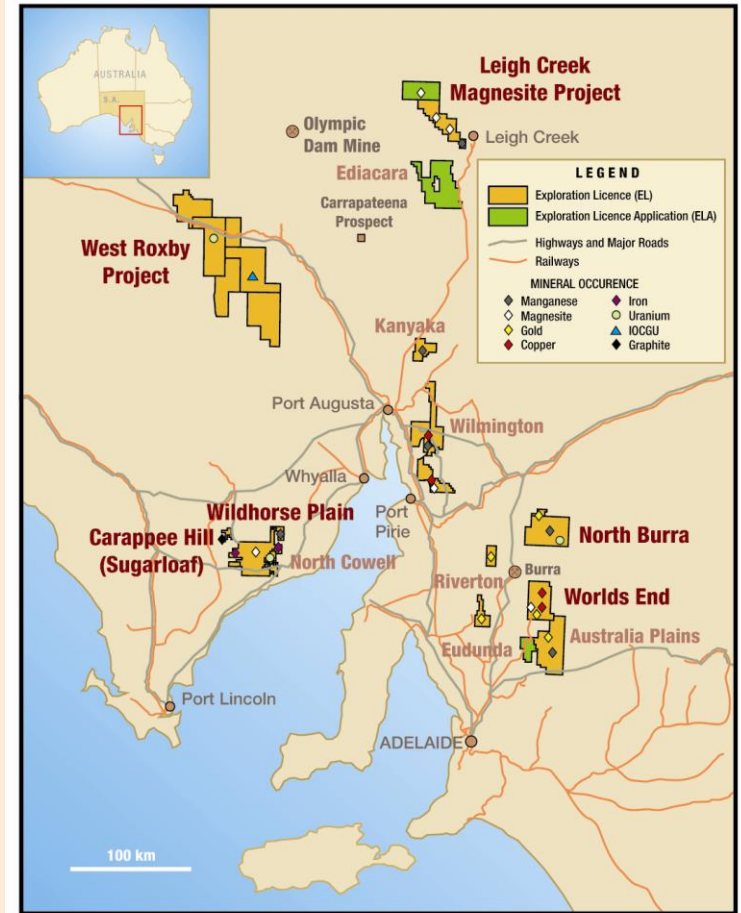
Seven manganese prospects including Salt Creek and Ketchowla.

Farm-In

Archer earning 100% of the rights to all minerals other than uranium on EL3377 (Wild Horse Plains) and EL3653(Elbow Hill) covering 895km² - prospective for manganese, copper and tin.

Joint Venture

JV with OMM Holdings over the Mn & Fe within EL3711 Jamieson Tank.



Archer has a large portfolio of prospective tenements



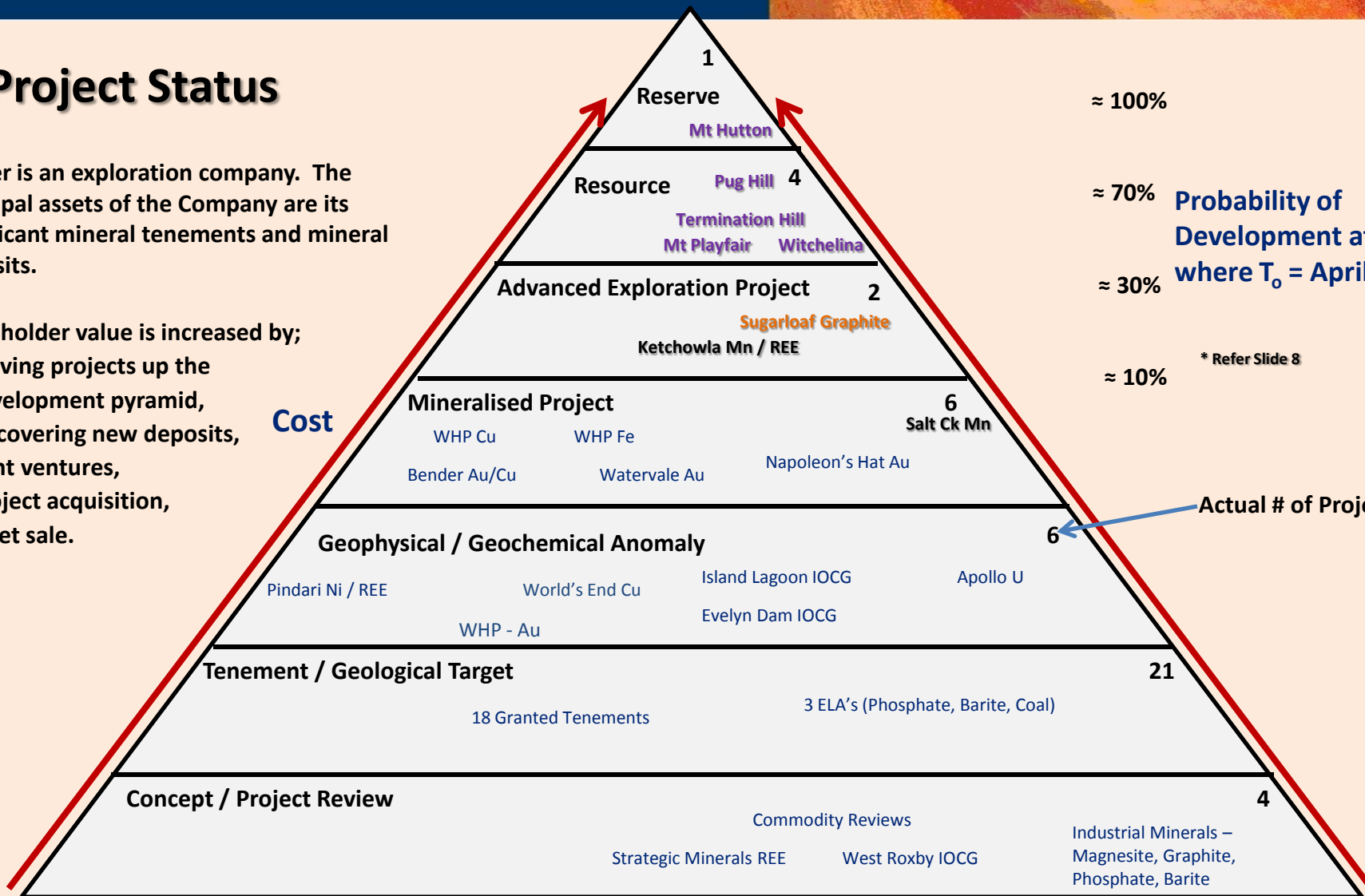
Project Status

Archer is an exploration company. The principal assets of the Company are its significant mineral tenements and mineral deposits.

Shareholder value is increased by;

- moving projects up the development pyramid,
- discovering new deposits,
- joint ventures,
- project acquisition,
- asset sale.

Cost



Probability of Development at T₀ where T₀ = April 2011

* Refer Slide 8

Actual # of Projects

Probability of Success

Archer has a solid pipeline of mineral projects at various stages of evaluation



2011 First Order Priorities

Graphite Characterisation

Graphite

Caraptee Hill

100% Sugarloaf deposit
Area 54 km²

Wildhorse Plains

Area 895 km²

Target

>20Mt Inferred Resource
containing >2.5Mt graphite

Amorphous/flake graphite

Business Development Calcine Characterisation

Magnesite

Termination Hill EL and
Witchelina ELA

Area 962 km²

TARGET

Mine producing 75,000 -
150,000tpa caustic
calcined magnesia

Exploration and Resource Definition

Manganese

Eyre Peninsula

Wild Horse Plains
(Salt Creek & Miltalie)
Nth Cowell 100%
Jamieson Tank

Area 1,042 km²

TARGET
DSO Mn

Adelaidean

Ketchowla 100%
Neales Flat 100%
Kanyaka 100%
Stone Hut 100%

Area 2,466 km²

TARGET
DSO Mn

Archer is focused on the critical few



What is Graphite?

Graphite is a soft, grey to black, opaque crystalline form of carbon. Chemical formula C.

Key Attributes:

- Exhibits metallic (thermal and electrical conductivity) and nonmetallic (inertness, high thermal resistance, and lubricity) properties.
- Stable in corrosive environments.

Major Uses:

- High-temperature lubricants and friction materials.
- Key component in the aviation, automotive, steel and plastic industries.
- Electrodes and brushes on electric motors.
- High-purity flake graphite is essential for the production of the lithium-ion batteries that are crucial to the electronics industry.

Market Outlook:

- China dominates market producing ≈80% of world supply. China now has a 20% export duty on graphite, as well as a 17% VAT.
- Strong demand growth predicted from:
 - the automotive industry - by 2020 hybrid electric vehicles (HEV) powered predominantly by lithium-ion batteries are projected to be 5 - 18% of sales. The 2009 US congressional stimulus bill included tens of billions of dollars in loans, grants, and tax incentives for battery and HEV research and manufacture to “jump-start” US industry.
 - emerging fuel cell technologies and next-generation nuclear reactors.

***Demand for graphite is expected to grow significantly and prices are on the rise.
Fine flake (≈USD1,400/t)***

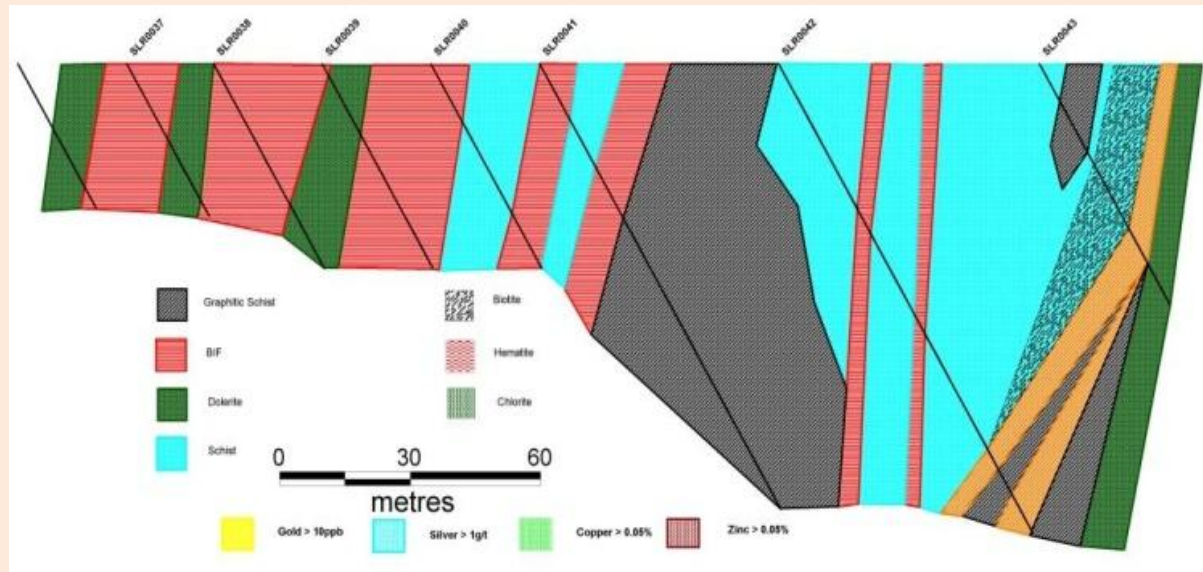


Sugarloaf Graphite

Sugarloaf consists of graphitic schist where the graphite formed by the concentration and crystallisation of carbon during regional ± contact metamorphism.

Two shafts dug to 63 and 80 feet in 1915 returned values of 25.3% and 15% carbon respectively. There is no record of tonnes mined from the shafts.

In 2004 Helix and Goldstream both drilled portions of the Sugarloaf deposit, although no carbon assays are reported, considerable graphite (up to 70m intercepts) was recorded in drill logs . 23 of 41 holes drilled recorded intervals of graphite.



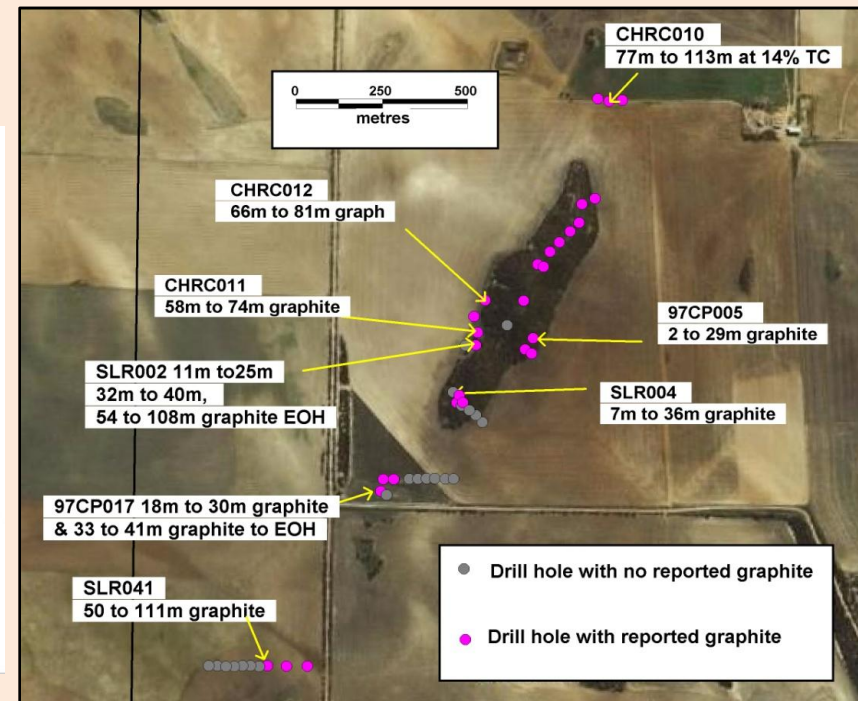
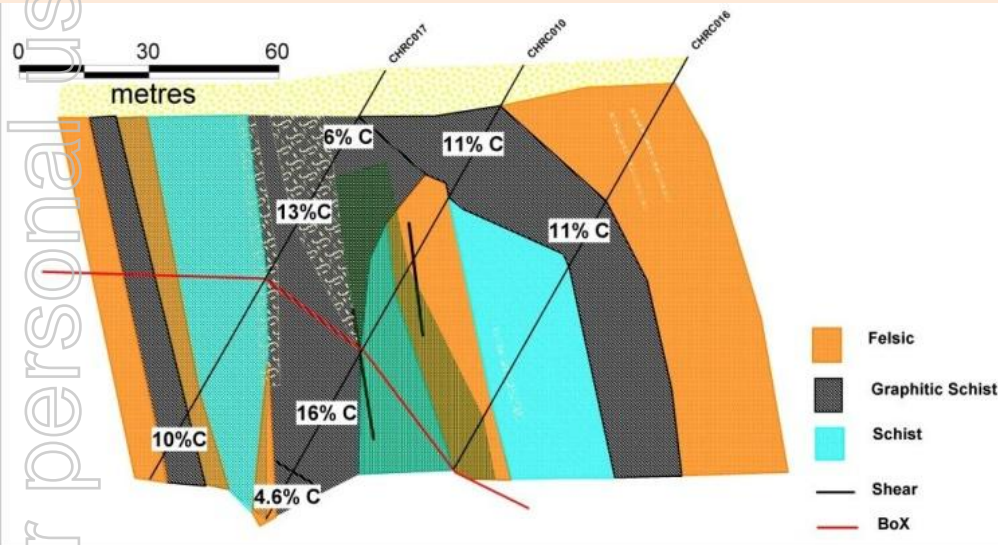
Goldstream drill section

Graphite was not so important then!

Sugarloaf Graphite

Archer drilling has recorded wide graphite intervals with total carbon values up to 22.9%.

The area has a pronounced EM signature extending over 2.5 km.



Numerous drill holes record significant graphite intercepts over a 2km strike. Collar locations of historic drill holes are considered to be $\pm 20m$.

CHRC010	10-26m	16m @ 11.3% total C
	77-113m	36m @ 14.0% total C
Inc	77-85m	8m @ 22.9% total C
CHRC016	36-64m	28m @ 11.1% total C
CHRC017	12-52m	40m @ 10.8% total C
Inc	28-48m	20m @ 13.1% total C
	92-100m	8m @ 10.7% total C

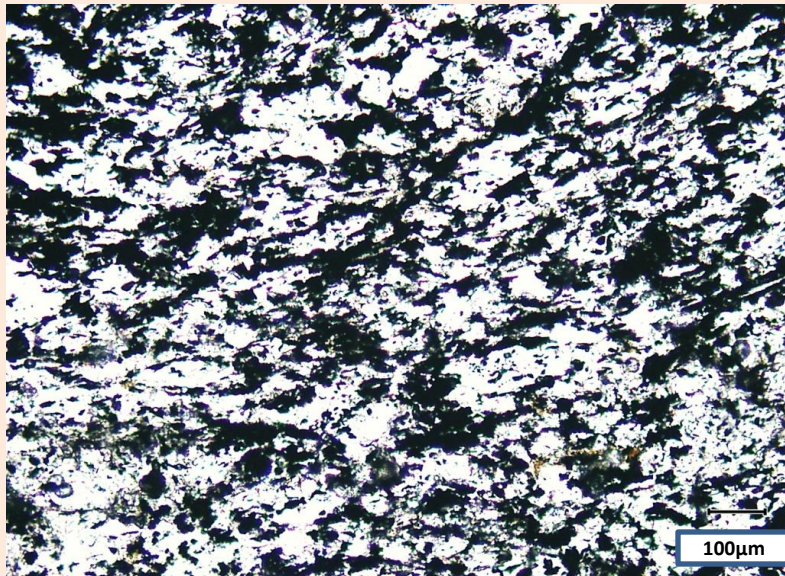
High grade total carbon recorded over wide drill intercepts



Sugarloaf Graphite

- Graphitic schist adjacent to a felsic intrusion.
- Petrology identified graphite averaging 0.1mm in length.
- Sugarloaf likely to be able to produce amorphous graphite as well as potentially fine flake products.
- Exploration potential to 100m depth of 9 - >20Mt*.
- Felsic intrusive may coarsen flake size proximal to intrusion.

**The potential quantities and grades presented are conceptual in nature, there has been insufficient exploration to define an overall Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource*



Photomicrograph: Transmitted light (TL). Thin section (TS). Ordinary light (OL). Moderate magnification (x100). Shows typical mode of occurrence and flake size of schistose black-opaque graphite within (muscovite) quartz-rich metasiltstone.

Another sample of weathered graphitic schist from the collar of one of the shafts was assessed as being mostly carbon with minor graphite.

When it comes to graphite – size matters

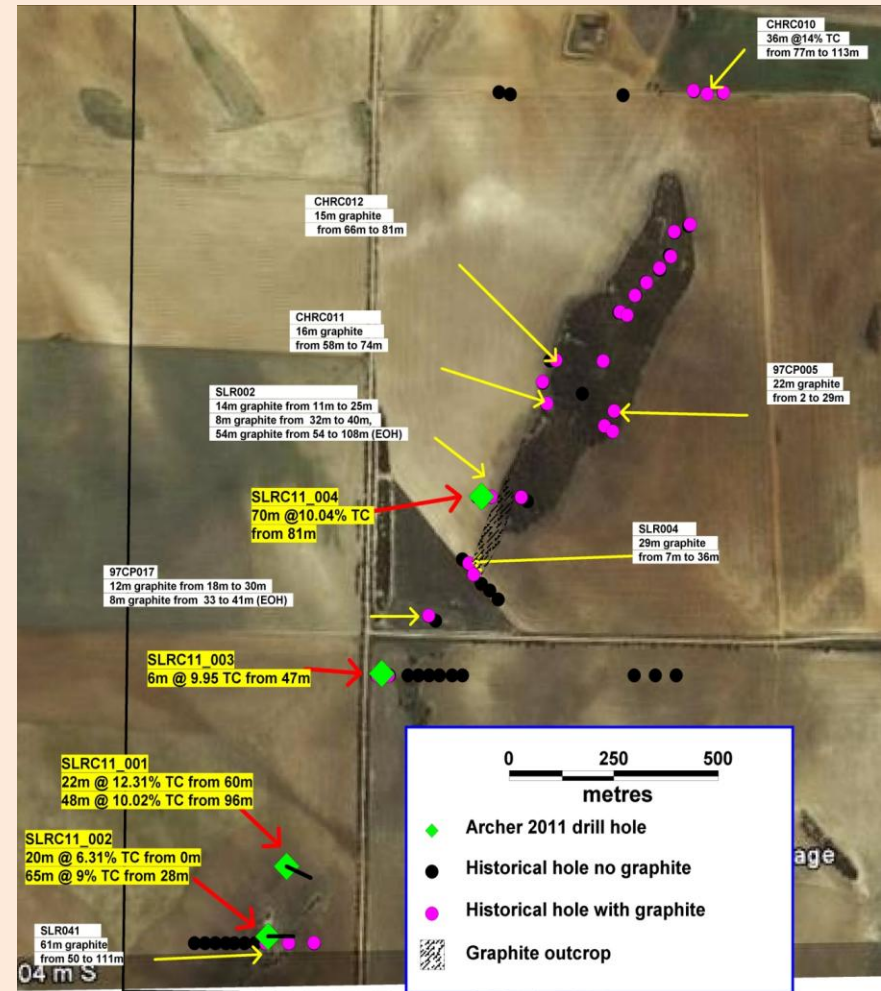
Sugarloaf Graphite

Work Program

- Drilling in March – April 2011 confirmed overall strike extent of the highly graphitic schist.
- 4 RC drill holes were drilled in April 2011. Highly graphitic schist intersections included:

Hole ID	From (m)	To (m)	Interval (m)	Total Carbon (%)
SLRC11_001	60	82	22	12.31%
	96	139	43	10.43%
	139	144	5	6.50%
SLRC11_002	0	9	9	8.77%
	9	20	11	5.78%
	28	38	10	13.05%
	47	63	16	11.08%
	64	75	11	7.05%
	75	93	18	10.77%
SLRC11_003	47	53	6	9.90%
SLRC11_004	81	90	9	6.60%
	90	103	13	15.00%
	106	113	7	10.10%
	124	140	16	12.80%
	140	148	8	8.00%
	148	151	3	17.00%

- A number of samples from varying depths will be collected for further detailed petrology and graphite quality testing.



Location of 2011 metallurgical drill holes

Whilst at an early stage of evaluation, Sugarloaf has excellent potential



What is Magnesite and Magnesia?

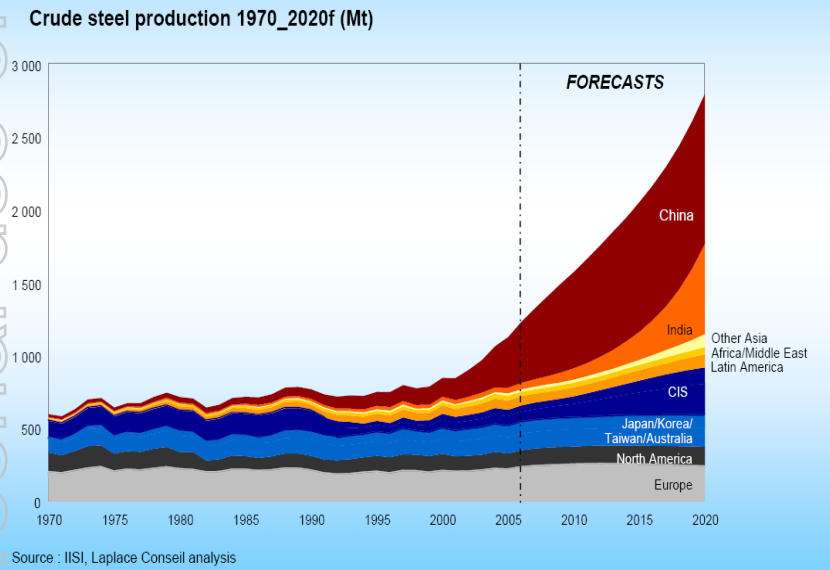
- Magnesite is magnesium carbonate (MgCO_3). Leigh Creek magnesite was deposited as a chemical precipitate in shallow, marginal marine lagoons and mudflats, and occurs predominantly as cryptocrystalline particles 1-5 μm in size.
- 86 separate interbeds within the Skillogalee Dolomite have been identified at Leigh Creek.

Magnesia (MgO) is produced by heating magnesite typically above 750°C - 1000°C . Magnesia is traded in three forms:

1. **Caustic Calcined Magnesia (CCM)** is formed by heating magnesite to temperatures up to $1,000^\circ\text{C}$. It is reactive and that reactivity is important for construction materials, industrial applications, in fertilizers and as a soil conditioning agent in agriculture, for water purification and waste water treatment and in the paper and rubber industries.
2. **Deadburn magnesia (DBM)** is produced by heating CCM to temperatures of $2,300^\circ\text{C}$ to produce inert magnesia used for the production of refractory bricks.
3. **Electrofused magnesia (EM)** is produced by melting CCM to $2,800$ - $3,000^\circ\text{C}$ to produce crystalline magnesia used primarily in arduous steelmaking applications.

Magnesite / magnesia products are widely used across a number of high growth industries and widely used in high technology consumer goods

Magnesia Market Growth




MgO growth closely mirrors that of the steel industry



MgO Refractory Bricks

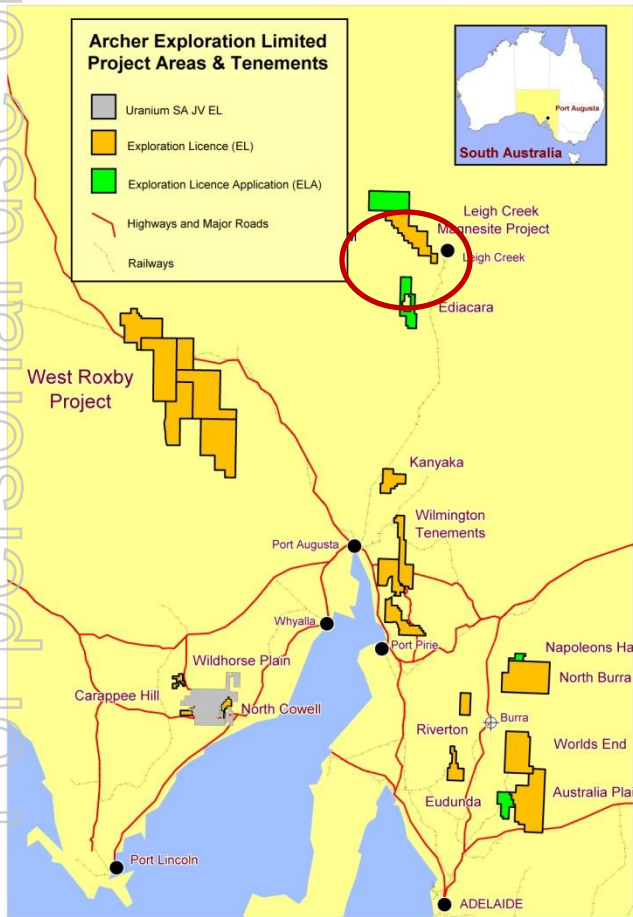
Automotive applications - In 5 years

- Interior parts
 - Seat components
 - Instrument panels /
 - Knee bolster
 - Steering column components
 - Steering wheels
 - Brake & clutch pedal brackets
 - Airbag retainers
 - Pedal brackets
 - Radio heat sink/Frame
 - Radio/HVAC covers
 - Sunroof components
 - Mirror bracket/Frames
 - Headlight retainer
 - Inner door frame
 - Chassis and body
 - A- and B-pillars
 - Grill reinforcements
 - Rad supports
 - Engine hoods
 - Roof panels
 - Rear deck lids
 - Full magnesium doors
 - Wheels
 - Engine parts
 - Cylinder head covers
 - Intake manifolds
 - Accy. Dr. brackets
 - Electrical connectors
 - Oil pans
 - Engine blocks
 - Bed plates
 - Engine supports
 - Engine cradles
 - FAS
 - Drive train parts
 - Manual transmission housing
 - 4 WD transfer case
 - Automatic transmission housing
- 

- Industrial applications - concrete
- Building products – Mg board
- Fertilizers and soil conditioners – strong local market
- Water purification
- Waste water treatment
- Acid mine water and acid tailings neutralisation
- Consumer electronics - Mobile phones, laptops, cameras, iPods, PDAs
- High tech alloys – AM-lite
- Magnesium batteries which hold twice the energy of lithium-ion cells likely to be used to power electric cars
- Liquid magnesium battery offers promising solar energy storage technique

MgO Market grows at ≈330ktpa. 63% of market in refractories; 23% in chemicals and 14% into magnesium metal

Archer's Leigh Creek Magnesite Deposits



- High grade ($\approx 42\%$ MgO)
- Consistent chemical composition over 80 kms strike
- 69 DDHs and all other attendant studies completed by previous owner to underpin JORC resource and reserve estimation
- \$millions spent on BFS for Mg metal production

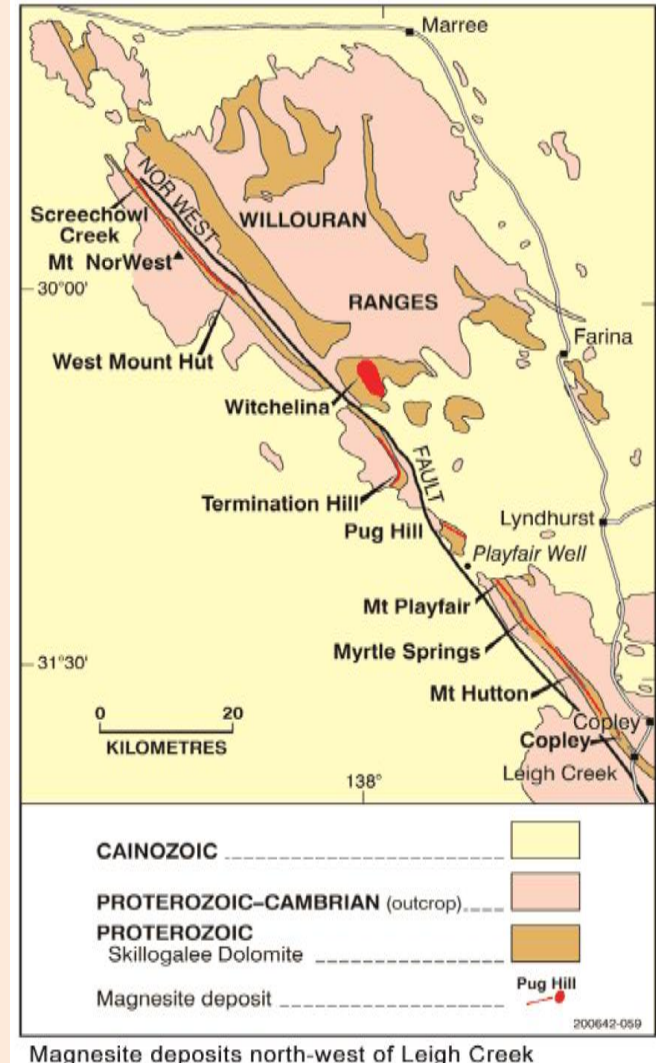
“World Class” is often self-bestowed but rarely deserved – Leigh Creek is an exception

MDL's 1999 Resource Estimate

Area	Measured* (Mt)	Indicated* (Mt)	Inferred* (Mt)	MgO ¹
Mt Hutton	18.3	42	53	42.9%
Mt Playfair		11	23	42.5%
Pug Hill		10	10	42.7%
Termination Hill	4	5	20	42.8%
Witchelina	23.7	94	99	40.0%
Total	46	162	205	

*Source: Reproduced from MDL Report "Economic Evaluation of the Pug Hill Magnesite Deposit, North Flinders Ranges, South Australia. 2001. Note full BFS completed and JORC resources for 5 deposits and JORC reserve for Mt Hutton calculated. The independent resource estimates were completed by Mr. Colin Arthur (BSc, MSc, FGS, MAusIMM, CGeol, CEng) Manager, Micromine Resource Centre, August 1999. The estimates were based on 69 fully cored DDHs and all other attendant studies required to support resource and reserve estimation.

¹ Pure magnesite is 47.8% MgO



413Mt JORC Measured, Indicated and Inferred Resource

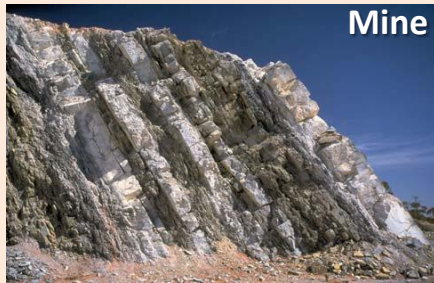
Leigh Creek Magnesite

Calcining Test Work

- Calcining tests on straight run-of-mine magnesite produced magnesia grading:
 - ≥ 90% MgO
 - ≥ 4.5% SiO₂
 - ≈ 0.3% Al₂O₃
 - ≈ 0.6% CaO
 - ≈ 0.4% Fe₂O₃
- To maximise the marketability of magnesia produced the magnesia (MgO) increased to ≥95% MgO and SiO₂ reduced to ≤3.0%.
- Talc - hydrated magnesium silicate H₂Mg₃(SiO₃)₄ or Mg₃Si₄O₁₀(OH)₂ is the principal silica contributor.
- Further test work will be undertaken to determine the optimum process flow sheet. Tests are being scoped and are likely to include evaluating flotation prior to calcining.

Further test work being scoped to increase product capability

Growing the Magnesite / Magnesia Business



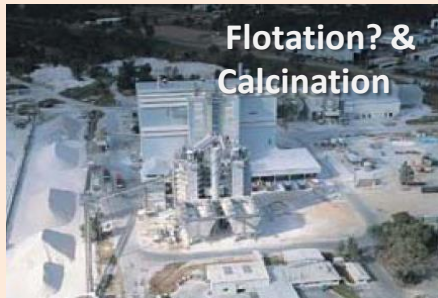
ROM $MgCO_3$



Crushed $MgCO_3$



Crushed $MgCO_3$



>90% MgO

Caustic Calcined

DSO Magnesite



Steadily Growing Market

For personal use only

Leigh Creek Development Options

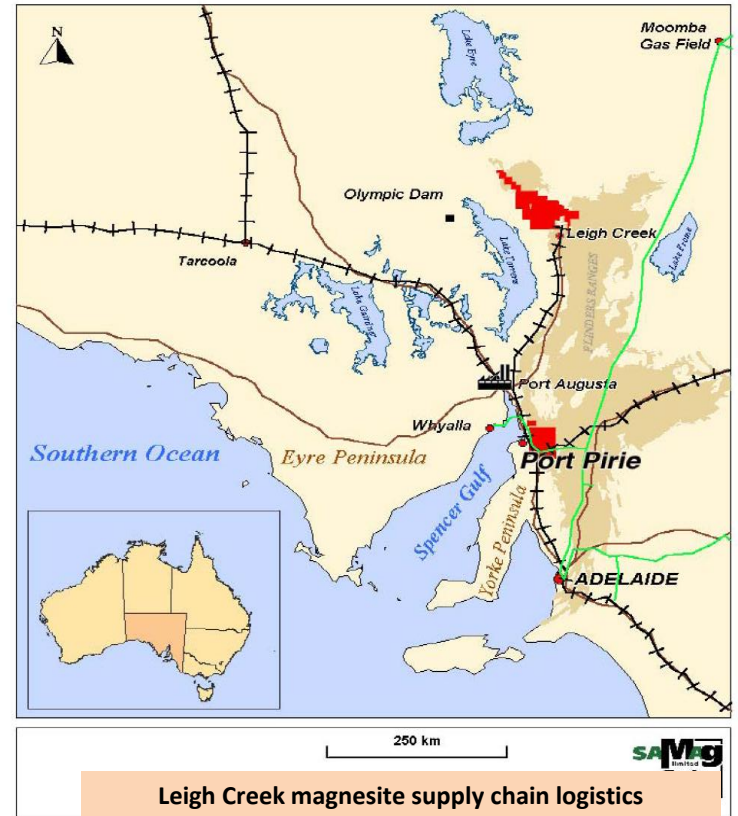
Key Attributes

- High grade magnesite deposits
- Huge JORC Resource can support large scale operation for many hundreds of years
- Low capital entry cost (Order of magnitude Capex price for 150,000tpa feed calciner and rotary cooler with installation \$30 million).
- Good supply chain logistics
- Proximal to Leigh Creek

Funding Options

Archer has 100% ownership of the magnesite deposits on Termination Hill EL and Witchelina ELA.

Capacity to raise funds by inviting partners to acquire interests in the assets and to participate in project development.



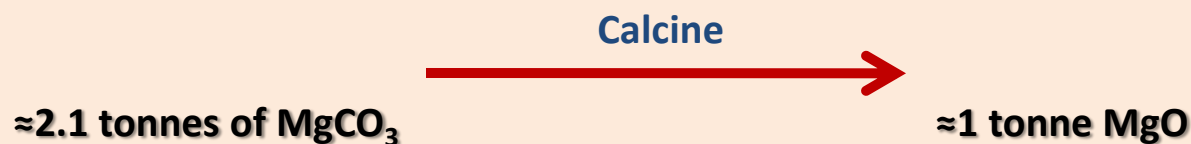
100% ownership affords Archer flexibility in project development



Why the interest? – you do the Math

Magnesite = MgCO_3

Magnesia = MgO



Archer's JORC magnesite resources at Leigh Creek = 413 million tonnes

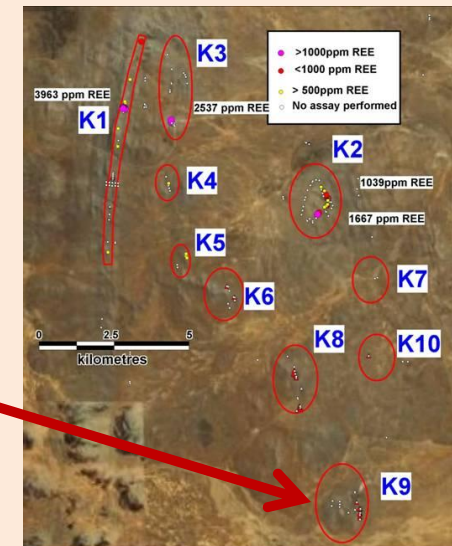
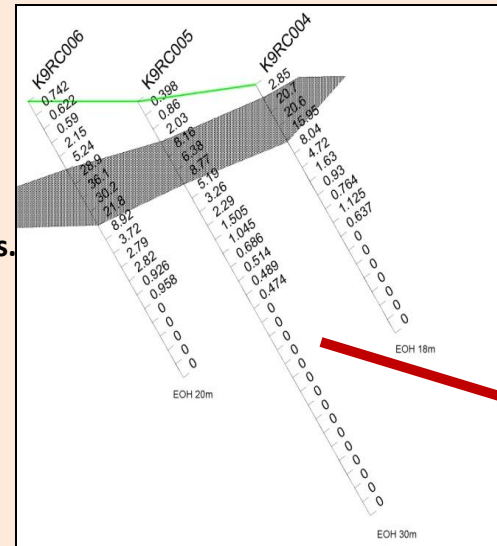
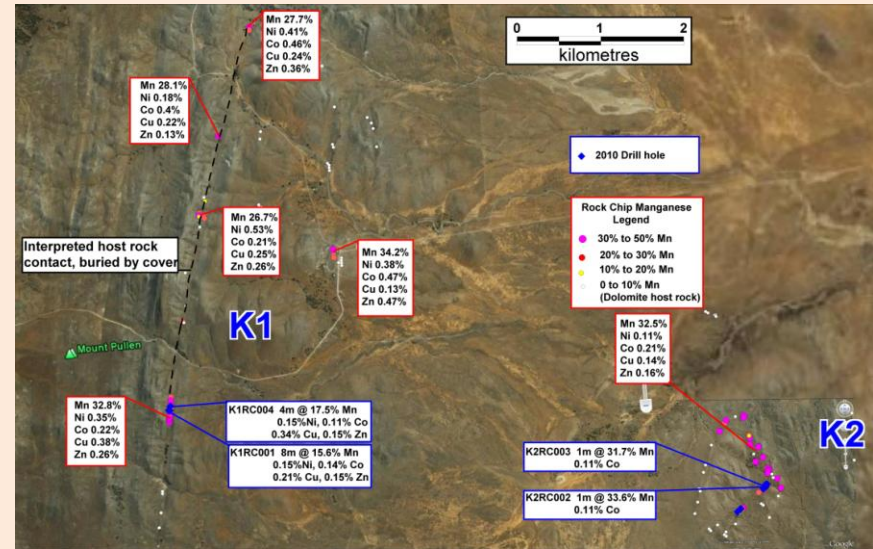
1 tonne $\text{MgO} \approx \text{A\$}620$ (2010 \$)

Further test work needed to unlock value

Manganese

Ketchowla – DSO quality manganese

- 5 main manganese deposits.
- Medium grade ($\approx 20\% \text{ Mn} \pm \text{Ni, Co, Cu \& Zn, REE}$).
- Dense media separation and gravity concentration upgraded K1 drill cuttings from 17.47% Mn to >35% Mn at a 23.2% recovery. Ni, Co, Cu, Zn and Y also upgraded:
 - Ni (0.258% to 0.412%);
 - Co (0.175% to 0.296%);
 - Cu (0.226% to 0.377%);
 - Zn (0.164% to 0.277%);
 - Yttrium 113.2ppm to 204ppm.
- 90% – 95% recovery of Mn, Ni, Co, Cu & Zn in agitated acid leach tests.
- Peak assays of 0.47% REE (from rock chip samples) and 0.36% REE in drill cuttings at K1, K2, K3 and K9 deposits.
- Elevated REEs at K9 not related to manganese and occur within a weathered intrusive?
- Manganese deposits open at depth and along strike.
- Recently completed ground gravity survey has identified drill targets extending under surficial cover.



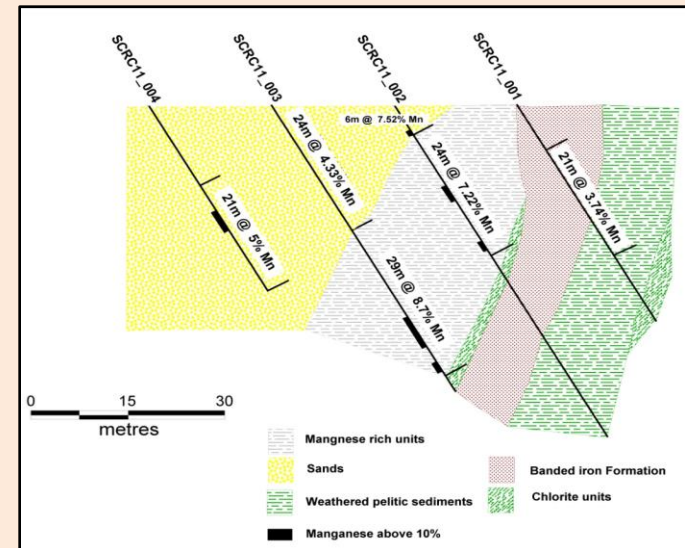
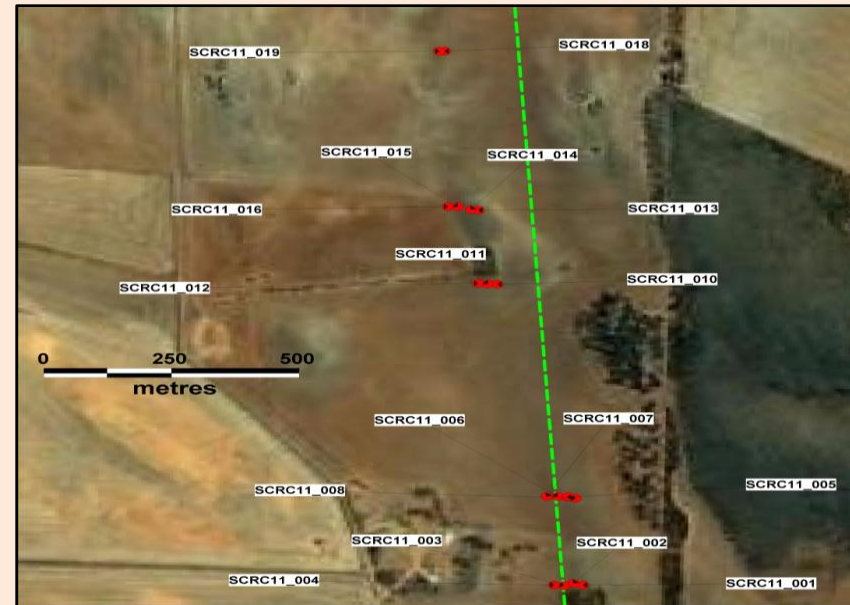
Ketchowla one of several Archer manganese projects

For personal use only

Manganese

Salt Creek

- Widespread manganese intersected in all 19 RC drill holes completed in April 2011.
- The drilling tested 1.5km of strike or just 15% of the known strike length of at least 10km. The eastern limb and western flanks of the syncline yet to be drill tested.
- Significant manganese intercepts including:
 - 5m @ 12.47% Mn from 14 to 19m in SCRC11_002
 - 57m @ 6.44% Mn from 0-57m in SCRC_003 including 11m @ 12.35% Mn from 42 to 53m
 - 7m @ 12.12% Mn from 5 to 12m in SCRC11_005
- Samples to be collected for dense media and gravity separation.





Thank You

SAREIC Conference Adelaide 3rd May 2011

Archer Exploration Limited

ASX Code: AXE

Email Contact: info@archerexploration.com.au

Phone: +61 8 8272 3288

Facsimile: +61 8 8272 3888

Website: www.archerexploration.com.au