



# Arafura Resources Ltd

## Nolans Project

Roskills – Metal Events

Rare Earths Conference

Hong Kong

5 November 2007

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# Nolans - Fact Sheet

1. A significant resource of rare earths
2. Exposed at surface – a small, long life, low cost, safe, open pit
3. A specific process flow sheet to separate products streams
  - Rare earths to separated product (99% grade)
  - Phosphoric acid (merchant grade to technical quality)
  - With additional by-products of calcium chloride and uranium
4. Rare earths high in Nd (21%), Pr (6%)
  - Major materials in high growth markets
  - Hybrid cars (electric motors & rechargeable batteries) , plasma screens
  - Electric motors for just about everything

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# Nolans - Valuation

1. NPV of AUD \$1.1 Billion (post tax)
2. Revenue of AUD \$8.25 billion (2007 dollars)
3. Operating life of 20 years
4. Revenue from 4 product streams
  - Rare earths (65%), phosphoric acid (16%), calcium chloride (11%), uranium (8%)
5. Exchange rate of AUD\$1 = USD\$0.90 over life of operation
6. Conservatism used in capex, opex, revenue and exchange rate

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# Nolans – PFS assumptions

## 1. Capital costs estimated at AUD\$750m

- A base of AUD\$450m for all plant
- Includes mine site, RE (99%), Phos acid, Calcium Chloride & Uranium
- Includes AUD\$120m for contingency – scope change
- Includes AUD\$180 for first fill chemicals, EPCM etc
- Assumes Australian built & manufactured plant

## 2. Operating costs estimated at AUD\$350m per annum

- Assumes imported chemicals (70% of opex costs)
- Chemical consumption based on laboratory bench scale test work

## 3. Production rates

- Conservative ramp up rates
  - 50% to 75% to 100% over 3 years
- Assumes start-up on imported chemicals

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# Nolans Valuation - Assumptions

## 1. Conservative Pricing

- Rare earths            20,000 tonnes            @            US\$ 11,600 / t
- Phosphoric acid        150,000 tonnes           @            US\$ 400 / t
- Calcium Chloride      400,000 tonnes           @            US\$ 100 / t
- Uranium Oxide         150 tonnes                @            US\$ 100/lb

2. Conservative exchange rate @ 0.90

3. Escalation factors used in both operating & revenue

4. Hurdle rate 10%

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# Nolans Project - Opportunities

## 1. Resources grade

- Assumes the average resource grade – conservative
- Optimum feed grade analysis in progress
- Clay rejection work in progress

## 2. Capital costs

- Savings expected with components manufactured overseas
- Capital requirements under review

## 3. Operating costs

- On-site chemical manufacture will save +AUD\$60m per year
- Reduction in consumption rates expected during pilot plant optimisation

## 4. Production rates

- Faster ramp up possible with on-site chemical manufacture

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# Nolans Project - Opportunities

## 6. Exchange rate

- The long term forecast USD : AUD is 0.75
- At AUD\$1=USD\$0.75 has a +\$600m impact on NPV

## 7. Pricing

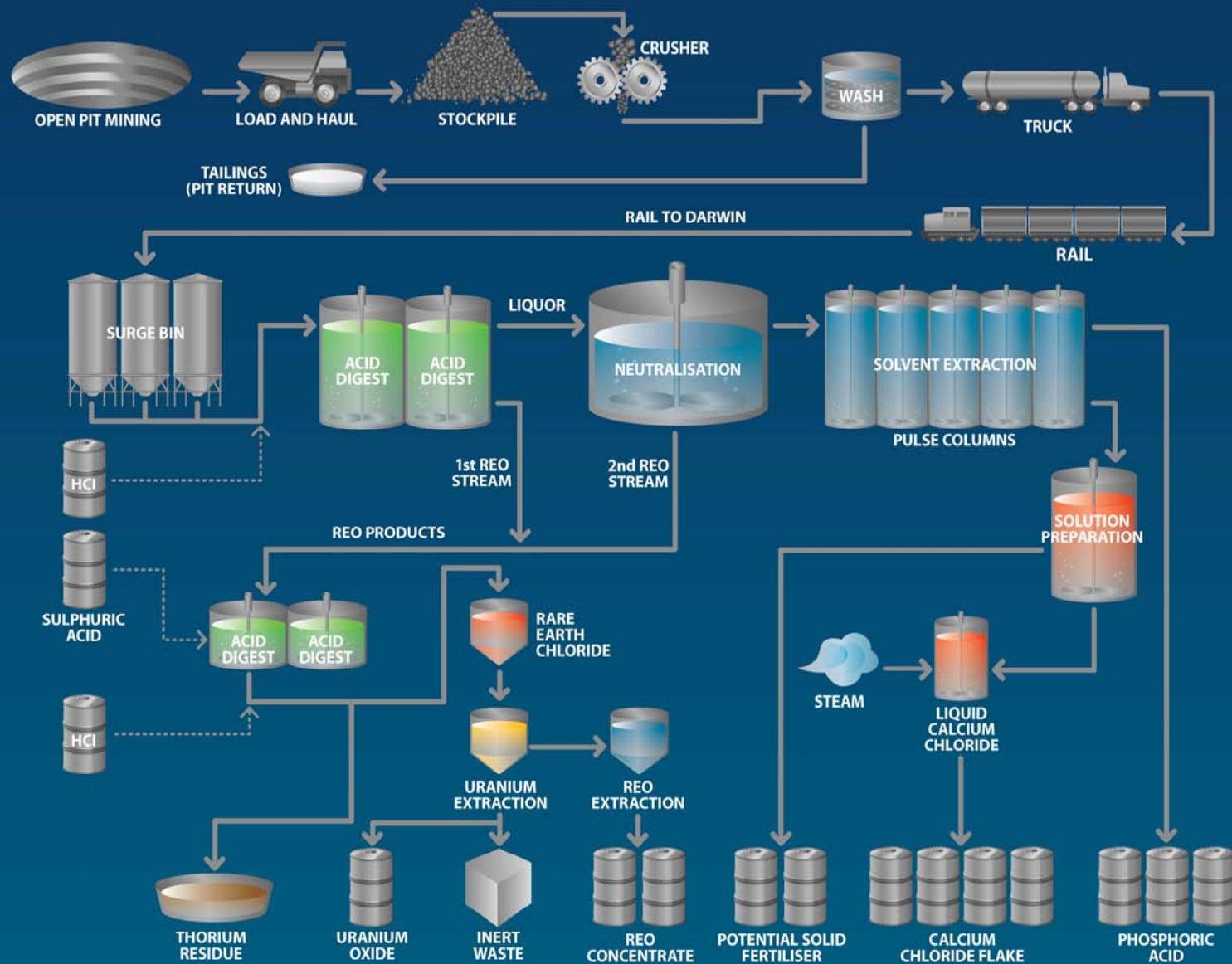
	PFS	Current prices <sup>^</sup>
• Rare earths*	US\$ 11,600/t	US\$ 13,900/t
• Phosphoric acid	US\$ 400/t	US\$ 500 – 600/t
• Calcium chloride**	US\$ 100/t	US\$ 200/t
• Uranium oxide	US\$ 100/lb	US\$ 80/lb
• Revenue pa at Forex 0.90	AUD\$410m	AUD\$520m
• Revenue pa at Forex 0.75	AUD\$485m	AUD\$620m

\*Assumes 99% grade separated rare earths on the mix of rare earths in the Nolans mineralisation. \*\* FOB price. <sup>^</sup>As at Q3 2007

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# Nolans Project Flowsheet



Conceptual Flowsheet design as at July 2007



# Development Timeline

## Development Plans – Nolans

2008	Pilot plant & detailed engineering design
2009	Approvals processes
2010	Construction & commissioning
2011	Production at 50% utilisation = 10,000 t REO
2012	Production at 75% utilisation = 15,000 t REO
2013	Production at 100% utilisation = 20,000 t REO

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# Planned Activities

## Finalise test work

- Uranium recovery (previously reported indicatively at 80%)
- Thorium rejection
- Report due late 2008

## Resources drilling targets (<20,000 metres program in progress)

- Additional resources
- Improved definition of current resources
- High grade resource zones

## Pilot plant February 2008 – July 2008

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# Summary

## Nolans

- Long life operation enriched in high value rare earths
- Multiple revenue streams lowers commercial risk
  - More complex plant design
- Pilot plant and definitive feasibility study (DFS) in 2008
- Still significant amounts of engineering studies to be undertaken
- Looking for strategic partnerships & growth

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