

# **OUARTERLY** For the Three months ending 31 December 2008 REPORT

Galaxy Resources Limited ("Galaxy") made significant progress during the quarter finishing 31 December 08 towards progressively developing the Mt Cattlin Lithium Tantalum Project. Of most significance was the release of a Definitive Feasibility Study for Mt Cattlin which identified the 150,000 tonne per annum spodumene concentrate plant would generate a positive net cash flow (before tax) of in excess of \$26 million a year, with payback of 4 years. The resource supports a mine life of 15 years but is still open along strike and at depth. Reflecting Galaxy's positive commitment to Mt Cattlin, the Company has assembled a strong professional team to lead the development of the project, including the appointment of new Managing Director, Mr Iggy Tan.



## SIGNIFICANT EVENTS DURING THE QUARTER

- Mr Iggy Tan appointed as Managing Director to move the Company towards production from the Mt Cattlin lithium/tantalum project.
- The company raised \$1 million via a capital book build to sophisticated investors during the quarter.
- Mr Dudley Kingsnorth of the Industrial Minerals Company of Australia Pty Ltd appointed lithium and tantalum market consultant.
- The Company achieved an important milestone in the regulatory approval process, requiring only an informal level of assessment.
- Preliminary testwork by Outotec Oyj (Outotec) indicated excellent potential to produce battery grade lithium carbonate using the 'Soda Ash' processing technique.
- Soda Ash chosen as preferred processing route due to the quality of the product produced and the slightly lower operating cost.
- Company committed to the completion of the concentrate Definitive Feasibility Study (DFS) at the end of 2008 and this was achieved on time.

- The DFS results indicated that Mt Cattlin is a robust project, with production from the 1 million tpa mine and concentrator to potentially commence during Quarter 3, 2010. Other DFS results indicated:
  - Operation to produce 150,000 tpa of spodumene concentrate and 56,144 lbs of contained tantalum concentrate.
  - First stage project delivers a LOM average of A\$26 million pre tax net cash flow per annum (@ FX rate of 0.734) and project Net Present Value (NPV) of A\$128 million (before tax, discount rate of 8%).
  - Capital cost estimate of A\$68 million at a DFS level of accuracy.
- The Company discovered lithium-bearing pegmatite zones at depth highlighting the potential for multiple stacked lodes, at similar grades to known mineralisation at the surface.
- Extension drilling to the south west has confirmed the Mt Cattlin deposit is still open along strike.



### Corporate

### The 2008 Year

Galaxy is at a pivotal point as the Company's progresses development of the flagship Mt Cattlin Lithium/Tantalum project near Ravensthorpe in the South West of Western Australia. The past year has been one of significant development and exploration success for Mt Cattlin. Activities focused on completion of resource definition drilling and a pre feasibility study into the viability of producing spodumene (lithium) and tantalum concentrates from Mt Cattlin.

A maiden resource estimate and pre-feasibility study was completed in December 2007. The initial resource estimate gives contained mineral resources for the Mt Cattlin Deposit of 2.03 million tonnes of spodumene and 6.62 million pounds of Ta<sub>2</sub>O<sub>5</sub>. The classification of the resource is shown in the table below.

Category	Tonnes	Ta₂O₅ ppm	Li %	Li₂O ppm	Li₂O %	Spodumene %
Measured	2,028,715	182	0.29	6249	0.62	9.19
Indicated	10,141,524	114	0.32	6958	0.70	10.23
Inferred	12,602,066	113	0.20	4295	0.43	6.32
TOTAL	24,772,306	119	0.26	5545	0.55	8.15
Note: >= 0ppm Li <sub>2</sub> O lower cutoff grade, with upper grade threshold modulation. Figures may not sum due to						

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Based on robust project economics, a decision was made to proceed with a Definitive Feasibility Study (DFS) into the development of an open pit mine and concentrator during January 2008.

The Board continues to be encouraged about the market potential for lithium, with global demand currently being driven by the steeply rising use of lithium ion batteries for mobile equipment and more recently, electric and hybrid vehicles. Notwithstanding the current difficult share market conditions, the board believes Galaxy is focused on a commodity that now appears to be in strong demand.

#### Appointment of Managing Director

On 11 November 2008, the Company announced the appointment of experienced lithium mining operations executive, Mr Iggy Tan, as Managing Director to more actively progress Mt Cattlin towards production. Mr Tan joined the Company as non-executive director on 18 September 2008. Mr Tan's



appointment was a key step in the Company's plan to become a substantial lithium producer.

### **Resignation of Director**

Mr Michael Fotios resigned as a Director of the Company on the 17 December 2008. The Company thanked Mr Fotios for his very valuable contribution during his time as director. Mr Fotios was instrumental in building the mineral exploration assets of Galaxy based on his extensive knowledge of the geology and prospectivity of the Company's tenement portfolio.

#### **Capital Raising**

The company raised \$1 million via a capital book build to sophisticated investors during the quarter. The funds raised through the book build will be used to help complete the DFS of the Company's Mt Cattlin Lithium Tantalum Project. The book build placement consisted of an issue price of 35 cents per share, together with free attaching, unlisted 1 year option exercisable at 35 cents each, to raise gross proceeds of \$1m. The capital will be used for the various environmental, geological, mining and engineering studies required to complete the DFS of the Mt Cattlin project.

#### Appointment of Marketing Consultant

Mr Dudley Kingsnorth of the Industrial Minerals Company of Australia Pty Ltd was appointed lithium and tantalum market consultant to the company. Mr Kingsnorth provided independent advice to the Company to finalise the lithium market analysis and forecast contained in the Mt Cattlin Definitive Feasibility Study. Mr Kingsnorth is an



internationally recognised authority on the global markets for lithium, tantalum and rare earths, having conducted numerous analyses and assessments for various international companies.

Mr Kingsnorth has editored several of Roskill's Reports on rare earths, lithium and tantalum. Currently he is editing the 10<sup>th</sup> edition of Roskill's Lithium Report, which is scheduled for release in early January 2009. Mr Kingsnorth was previously Marketing Manager – Industrial Minerals for Lithium Australia Limited who owned the Greenbushes lithium and tantalum operations.

#### **Environmental Milestone**

The Company achieved an important milestone in the regulatory approval process. An environmental impact assessment (EIA) referral document for the Mt Cattlin project was submitted to the Environmental Protection Authority (EPA) on 26th September 2008 for a decision on whether or not it requires assessment under the Environmental Protection Act.



The Environmental Protection Authority advised that the Mt Cattlin lithium and tantalum project will require an informal level of environmental assessment. The project will only be required to be approved under Part V of the Environmental Act which involves the submission of a Works Approval application to the Department of Environment and Conservation, a Mining Proposal and a Clearing Permit Application to the Department of Industry & Resources.

### Lithium Carbonate Test Results

The Company advanced the development of its Mt Cattlin lithium carbonate project with preliminary test work results demonstrating excellent potential to produce technical and battery grade lithium carbonate product from the Mt Cattlin spodumene. Preliminary testwork by Outotec Oyj (Outotec) indicates excellent potential to produce battery grade lithium carbonate using the 'Soda Ash' processing technique.



Both the Sulphuric Acid and Soda Ash leach routes were evaluated and proved viable processing methods. Initial leaching recoveries for both routes were in excess of 90 % which was extremely pleasing.

The Company has chosen the Soda Ash as preferred processing route due to the quality of the product produced and the slightly lower operating cost. Outotec samples even meet the most stringent levels of electrochemical grade lithium carbonate. Due to the success of the preliminary testwork, Galaxy has commenced the scoping phase of the feasibility work. Figure 2 -Outotec's Calcination Test Rig in Finland



### **Definitive Feasibility Study**

The Company completed the Definitive Feasibility Study (DFS) for its Mt Cattlin Lithium-Tantalum project near Ravensthorpe. The DFS has confirmed the economic and technical viability of the project which has a pre tax Net Present Value (NPV) of A\$128 million (8% discount rate), a life of mine (LOM) average pre tax cash flow of A\$26 million per annum and a capital cost of A\$68 million.

The DFS has identified a phased start up for the project, which includes the establishment of a mine and minerals plant first as part of a lower capital cost, lower technical and financial risk strategy that will bring earlier cash flow. From the minerals plant, the company can produce spodumene concentrate to sell to current lithium carbonate producers as a feed or establish toll treating partnerships. An important by-product of the proposed operation is production of a high quality tantalite concentrate.

Two key factors in the positive results were the favourable characteristics of Galaxy's flat lying pegmatite resource and the attractive economics of processing a simple concentrate for the lithium carbonate producers.

For the purpose of the study, a mining and processing rate of 1 million tonnes per annum of ore was assumed. Conventional open pit mining, crushing, heavy media separation and classification circuits comprising the following key process steps have been proposed:

- Open pit mining.
- Crushing and screening of ROM ore to -6mm.
- Three stage heavy media separation (HMS).
- Gravity concentration (spirals and wet tables) of tantalite minerals.
- Contract dressing and packaging of tantalite concentrates.
- Production of spodumene concentrate at 5.0 % Li<sub>2</sub>O.
- Shipment of bulk concentrate through Esperance port.



The following contractors and consultants were employed on the Definitive Feasibility Study:

- Como Engineering Pty Ltd (Plant Design)
- Hellman & Schofield Pty Ltd (Resource Modelling)
- Orelogy Pty Ltd Mine (Pit Optimisation)
- Dempers & Seymour Pty Ltd (Pit geotechnical design)
- Australian Tailings Consultants Pty Ltd (Tailings design)
- Rockwater Pty Ltd (Hydrology)
- Keith Lindbeck and Associates (Environmental Studies)
- Deep Woods Surveys Pty Ltd (Heritage Study)
- Mining Resources Pty Ltd (Mine Design)
- IQe Pty Ltd (Mining Cost Estimation)
- Nagrom & Company (Metallurgical test work)
- Ammtec Pty Ltd (Rock mechanics)
- Ammtec & SGS Pt Ltd (Metallurgical test work)
- MSP Engineering Pty Ltd (Technical review)
- Snowden Risk Services (Risk Assessment)
- Industrial Minerals Company (Market Review)
- Worley Parsons (Energy Study)
- Curtin University (Socio Economic Study)

### **DFS Results**

Operating Parameters	Quality		
Spodumene Concentrate Production	150,000		
Spodumene Concentrate Grade	5.0 % Li <sub>2</sub> O		
Tantalite Concentrate Production	56,144 lb contained Ta <sub>2</sub> O <sub>5</sub>		
Tantalite Concentrate Grade	25% Ta <sub>2</sub> O <sub>5</sub>		

Capital Costs	Included Contingency	Сарех	
Process Plant & EPCM	15%	A\$ 53.7 million	
Infrastructure, Utilities Construction & Earthworks	10%	A\$ 10.2 million	
Vehicles, First Fill & Prestart Costs	10%	A\$ 4.1 million	
Total Capital Costs		A\$ 68 million	

Operating Costs (LOM Ave)	A\$/t ore
Mining	A\$ 17.9/t
Processing	A\$ 16.3/t
Transport & Shipping	A\$ 5.4/t
Overheads	A\$ 1.4/t
Total	A\$ 41/t

Economics	0.73 AUD/USD FX Rate	0.70 AUD/USD FX Rate
Capital Costs	A\$ 68 million	A\$ 68 million
Revenue pa	A\$ 69 million	A\$ 72 million
Net Cash (pre tax) pa	A\$ 26 million	A\$ 29 million
Net Present Value NPV (non- geared, real @8%)	A\$ 128 million	A\$ 154 million
Internal rate of Return IRR%	26%	29%
Mine Life	15 Years	15 Years
Cash Cost	A\$ 41/t ore	A\$ 41/t ore

IMCOA has provided a positive forecast for lithium carbonate demand in the medium and long term, as the product is the building block in the production of lithium-ion batteries in the rapidly expanding international hybrid and electric vehicle market. In the short term, in spite of the current global financial crisis, supply is expected to remain 'tight' as there is an ongoing move to purchase the more fuel efficient and environmentally friendly hybrid and electric vehicles, albeit at lower rates than forecast a year or so ago. The Company is forecasting demand to outstrip supply in the medium term which will result in sustained upward pricing pressures.

The project will generate an LOM average of **A\$ 26 million net cash** per annum based on the sale of spodumene and tantalum concentrate. The project Net Present Value (NPV) (real and non-geared, before tax) is estimated at **\$A 128 million** using a discount rate of 8%. The LOM average cash operating cost is estimated at A\$41 per tonne of ore processed compared with estimated revenue of A\$71/t ore.

The project assumes the commencement of detailed engineering and procurement of long lead items at the start of quarter two 2009 and that the construction phase will commence during August 2009 with a construction period of 10 months allowing the plant to be commissioned during Quarter 3, 2010.

Figure 3 - Secondary and Tertiary Crusher Design





### Mt Cattlin Exploration & Drilling

An RC program designed to test strike extensions to the west of the known resource at Mt Cattlin, test the potential for stacked pegmatite lodes at depth, and infill portions of the Dowling pit area was completed in 2008. Assay results from this work were received and announced during the quarter. Further details are given below.

### **Deep Lithium Bearing Pegmatite Repetitions**

The Company announced on 4 December 2008, that final lithium assays had been received for deep RC holes completed in September 2008. The results confirmed the discovery of lithium-bearing pegmatite zones at depth, and highlights the potential for multiple stacked lodes, at similar grades to known mineralisation at the surface.

Most of the deep holes intersected several spodumene (lithium) bearing pegmatites below known mineralisation, with individual pegmatite widths ranging from around 7 to 10 metres. Grades are comparable to those of the known near-surface resource.

HOLE	East	North	From (m)	To (m)	Width (m)	Li <sub>2</sub> O (%)
GX861	224479	6282340	84	97	13	0.99
GX863	224440	6282420	84	97	13	0.77
GX863	224440	6282420	100	105	5	2.35
GX864	224479	6282263	72	77	5	0.78
GX864	224479	6282263	136	138	2	1.7
GX884	224241	6281979	74	81	7	1.17
GX884	224241	6281979	107	109	2	1.15
GX888	224400	6281980	81	87	6	0.72

The best intersection was 13 metres at 0.99%  $Li_2O$  in GX861, at a depth of 84 metres below the surface.

A list of selected high-grade intercepts from deep holes is given in Table 1, with cross section 6281980N (Figure 4) illustrating the series of sub-horizontal pegmatite horizons intersected by deep holes, together with  $Li_2O$  grades.

These results significantly enhance the exploration potential of the system. Deeper pegmatite horizons have not been included in the current resource estimate. Further drilling to follow up the depth potential is planned, which has the potential to significantly increase the size of the resource.



### South West Extensions

Several holes on the south western margin of the prospect intersected significant  $Li_2O$  grades, with the best result in hole GX903, which returned 13m at 1.56%  $Li_2O$ . Selected high grade intercepts from this drilling program are given in Table 2 below:

These intercepts (see Figure 5) represent the strike continuation of the shallow pegmatite zone that hosts the current resource.

Table 2. Selected high-grade intercepts from extension holes

HOLE	East	North	From (m)	To (m)	Width (m)	Li₂O (%)
GX896	224201	6281980	12	16	4	1.11
GX900	224200	6282060	20	23	3	1.35
GX901	224160	6282059	18	22	4	0.73
GX901	224160	6282059	29	34	5	0.85
GX903	224198	6282140	22	35	13	1.56

Some holes on the western and north western edge of the prospect have intersected what is interpreted to be a north east-trending dolerite dyke (Figure 5 overleaf). Further drilling to test whether the pegmatite unit continues to the west and north west of the dyke is planned for early 2009.



Figure 5 - Drill collars overlain on Quickbird image



### **Dowling Pit Infill Program**

This drilling program was designed to infill portions of the Dowling pit area and deepen some existing holes in this area which had been terminated prematurely. Drill collars from the August-September 2008 drilling (hole numbers GX856 to GX909) are highlighted in Figure 5. Infill drilling in the Dowling pit area has confirmed the geological model and returned some excellent intercepts, including those in Table 3 below:

Table 3. Selected high-grade intercepts from infill holes

HOLE	East	North	From (m)	To (m)	Width (m)	Li <sub>2</sub> O (%)
GX868	224850	6282458	18	32	14	2.75
GX869	224908	6282457	11	34	23	1.48

Note: Coordinates are GDA 94 to an accuracy of <1m. All holes are vertical and given the mineralised pegmatite is flat lying, intercept widths approximate true thickness. Spodumene content assumes 6.8% contained Li<sub>2</sub>O in Mt Cattlin spodumene. Intercepts are weighted averages calculated using a lower cut of 3% spodumene from 1 metre riffle split samples of RC percussion chips. No top cut has been applied. Analysis by SGS Australia Pty Ltd using AAS for Ll (converted to Ll<sub>2</sub>O).

### Exploration

### McMahon - Ravensthorpe (GXY 100%)

The McMahon pyrite, iron and base metals prospect is located 5 km east of the town of Ravensthorpe. Galaxy is continuing investigations to assess the potential for sulphuric acid production from pyrite mineralisation.

### West Kundip - Ravensthorpe (GXY 100%)

The West Kundip Prospect is situated about 18km southsoutheast of Ravensthorpe. Previous rock chip samples taken from surface exposures of massive manganese mineralisation have returned assays of up to 50% Mn. Additional data compilation has been carried out, and geological mapping and rock chip sampling is planned to follow up manganese targets.

### West River - Ravesthorpe (GXY 100% & 80%)

The West River (Bakers Hill) Prospect is located 18km southwest of Ravensthorpe. It hosts extensive zones of outcropping pegmatites, and has potential for lithium and tantalum, in addition to copper, zinc, gold and silver mineralisation. Grant of tenement application E74/415 has been progressed, and data compilation and review is underway prior to preparation of field work and drill programs for 2009.

### Elverdton JV- Ravensthorpe (GXY 25% / PIO 75%)

The Mt Chester Manganese Prospect is located within granted mining lease M74/163, approximately 9 kilometres from Ravensthorpe, Western Australia and 180 kilometres from the Port of Esperance. Pioneer have previously announced high grade manganese surface samples, at Mt Chester, up to a maximum value of 49% Mn. The manganese mineralisation remains open to both the north and south of the area sampled.

Pioneer has developed a drill program targeting manganese mineralisation at depth beneath the high grade surface samples, which is scheduled to commence in early 2009. A botanic survey has been completed and final clearances are expected shortly in preparation for the proposed drilling program.

The Joint Venture views that the Mt Chester Prospect has the potential to provide high-grade manganese ore and notes the favourable proximity to the deep water port of Esperance, a strategic advantage should exploration continue to prove successful.

#### Shoemaker Project (GXY 100%)

The Company announced the results of a gravity survey and rock chip sampling of hematite iron mineralisation earlier in 2008. Assays of the rock chip sampling confirmed the presence of high grade hematite iron mineralisation. Follow up mapping, outcrop sampling and RC drilling will be planned to test the geochemical and geophysical targets identified.

In addition, mapping and soil sampling programs will be prepared to assess the potential for precious metal mineralisation development on the contact between the granite and hydrothermally altered/fractured iron rich Proterozoic rocks on the east side of the impact structure.





DFS Metallurgical testing at Nagrom. (L) Terry Brittliffe (Galaxy) & Tony Wilkinson (Nagrom)

For more information, please contact:

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Competent Persons The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Philip Tornatora who is a full time employee of the Company and who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr. Tornatora has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity 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. Tornatora consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

#### Caution Regarding Forward Looking Statements

Statements regarding Galaxy's plans with respect to its mineral properties are forward-looking statements. There can be no assurance that Galaxys plans for development of its mineral properties will proceed as currently expected. There can also be no assurance that Galaxy will be able to confirm the presence of additional mineral deposits, that any mineralization will prove to be economic or that a mine will successfully be developed on any of Galaxy's mineral properties. Circumstances or management's estimates or opinions could change. The reader is cautioned not to place undue reliance on forward-looking statements

### About Galaxy (ASX: GXY)

Galaxy Resources Limited (Galaxy) is an industrial minerals company focusing on lithium and tantalum production. Galaxy has completed a definitive feasibility study (DFS) which suggests the Mt Cattlin lithium / tantalum project is commercially viable based on a processing rate of 1 million tonnes per annum over a 15 year mine life. The Company is planning to commence the development of the mine and the construction of the processing plant in mid 2009 with first concentrate production scheduled for Q3, 2010.

The company has also commenced a preliminary scoping study into the value adding downstream production of lithium carbonate (Li2CO3).

Lithium concentrate and lithium carbonate raw materials are currently in short supply and face high future demand growth due to advances in long life batteries and sophisticated electronics in hybrid and electric vehicles, mobile phones and computers.