

QUARTERLY ACTIVITIES REPORT

QUARTER ENDED JUNE 2023

Exploration Activity for the Quarter

Athena Resources Limited (ASX: AHN) (“Athena” or the “Company”) is pleased to present its Quarterly Report for the period ending June 30, 2023.

COMPANY HIGHLIGHTS

- Completion of metallurgical testwork on optimising magnetic separation simulating design processing conditions.
 - High grade concentrates from **70%** to **70.4% Fe** produced from fresh ore.
 - Excellent recoveries from **79.8%** to **93.4%** from fresh ore.
- Completion of geotechnical assessment and preliminary pit optimisation by Entech.
- Review and assessment of magnetite and base metal targets at the Byro Project.

Byro Magnetite Project

The Byro Magnetite Project is 340km north-east of the port of Geraldton in Western Australia’s Mid-West region. Central to the project is the Fe1 magnetite deposit with a Whole Rock Mineral Resource of **29.3Mt @ 24.7% Fe (10% cut-off)** with a Magnetite Mineral Resource of **21MT @ 70.7% Fe (DTR, 20% cut-off)** (ASX: AHN [Announcement 17 January 2023](#)).

Metallurgical Optimisation

During the Quarter, Athena progressed the Byro Project Study with further metallurgical test-work carried out by ALS Metallurgy’s Iron Ore Technical Centre (“IOTC”) under the supervision of consultant metallurgist Terry Weston. The program of test-work is designed to optimise the magnetic separation process to further de-risk the proposed flowsheet for the extraction of iron.

About Athena Resources: AHN is an Australian ASX listed explorer and developer of highgrade iron ore assets in Western Australia. The Company is focused on its Byro Project, strategically located in the Mid-West region 410km from the Port of Geraldton. The Byro Iron Ore Project has potential to mine and supply premium grade, low impurity magnetite (>70% Iron Content) for the production of green steel, a fast-growing global market opportunity. The Byro Project also contains exciting base metal potential.

Directors: Ed Edwards, Hau Wan Wai, Peter Newcomb • **Company Secretary:** Peter Newcomb • **Athena Resources Limited** ACN 113 758 900



The work focussed on Wet Low Intensity Magnetic Separation (Wet LIMS) and yielded highly encouraging results. This work was based on a substantial body of previous testwork, including the Davis Tube Recover (“DTR”) work, also completed by ALS Global IOTC, that was incorporated into the 2023 updated Mineral Resource Estimate.

Bulk samples were prepared from two diamond drill holes from the 2022 drilling campaign. These were used for larger scale simulation to test the Wet LIMS used within the process plant design. Comparing the bulk LIMS results against the previous LIMS and the large DTR dataset used for the design provides a clear indication of how successful the LIMS magnetic separation will be and gives a practical understanding of actual mass reporting to various stages of the concentrate grinding process or waste to tailings. The Flow diagram below shows the crucial stage of LIMS processing and significance of its effectiveness.

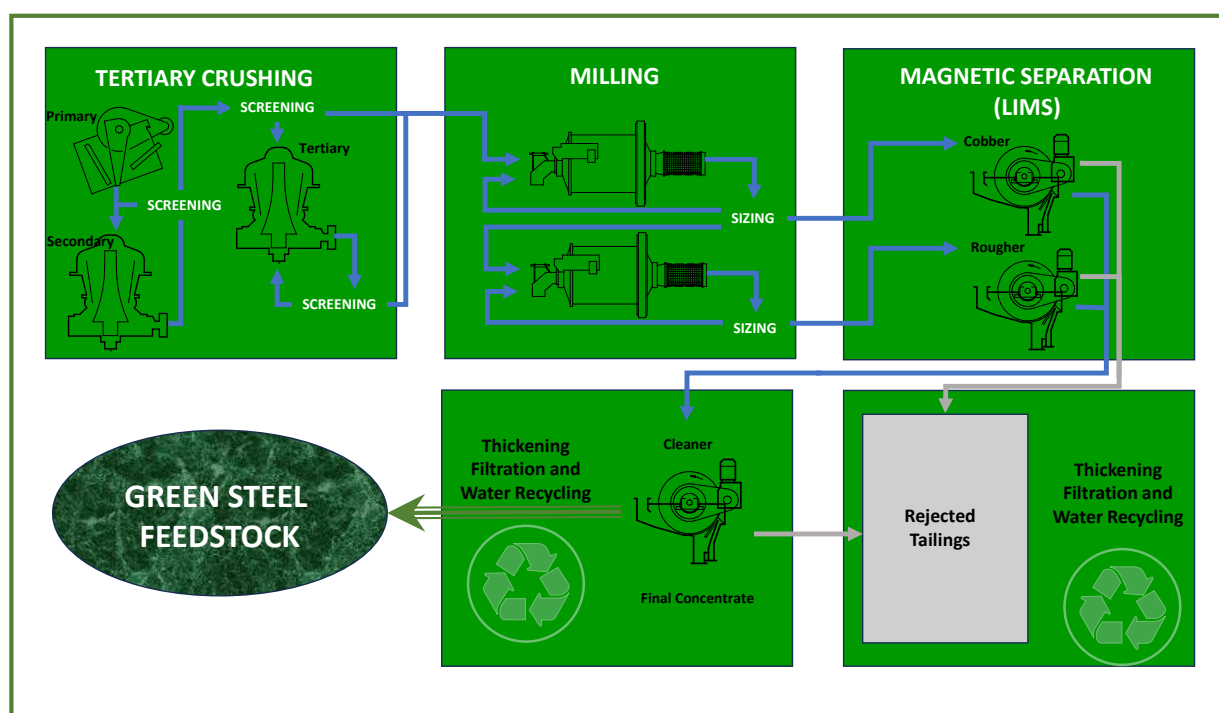


Figure 1. Wet LIMS circuits within the simplified process flow sheet

The material used included both weathered and fresh components covering a vertical depth of 140m through the Fe1 deposit. Composites were tested by Wet LIMS with a feed of p80 of 106 microns, providing data on mass balance and grade at the final LIMS stage.

The outcome of the wet LIMS is highly encouraging confirming a production concentrate of >70% Fe is achievable with recoveries up to 93.4% in fresh ore. The grades and recoveries are comparable and similar to those achieved by the previous DTR test-work.

Process Plant Optimisation

GR Engineering Services Limited (“GRES”) were commissioned to update the previously estimated capital and operational costs associated with the construction and operation of a 5Mt/annum processing facility proposed for the project. GRES were initially engaged in 2011 to carry out cost estimates and an operating flowsheet, which has largely been retained with some modification and improvement. During the quarter, work continued on interrogating and optimising the process plant design and exploring more cost-effective crushing and grinding options.

Geotechnical Assessment

Mining consultancy Entech Pty Ltd (“Entech”) were commissioned to carry out a geotechnical assessment of Fe1 magnetite deposit, based on the diamond core produced from the 2022 drilling campaign. This assessment included the following:

- Data collection, validation, and analysis.
 - Review of existing data from geotechnical and structure logging.
 - Process, collation, and reduction of drill hole data and geotechnical material properties testing.
 - Rock mass characterisation, and summary rock mass statistics by rock type and domain.
 - Structural discontinuity characterisation, including the summary of structural discontinuity statistics by defect set and domain.
 - Development of geotechnical model and analysis of special variability of rock mass characteristics, including structural discontinuities.
- Pit design and analysis
 - Establishment of geotechnical design sectors and domains.
 - Development of design input parameters.
 - Empirical analysis to determine initial slope configurations.
 - Kinematic analysis of bench and berm configurations.
 - Limit equilibrium analysis of representative sections of the pit.
- Report and Project Management
 - Pre-Feasibility / Scoping Study technical report input.

A draft report has been received from Entech with encouraging findings. This is presently under internal review.



Entech also commenced Preliminary Pit Optimisation which included block model deblocking, assumption/model conditioning, and Pit Optimisation. This work was incomplete at the end of the June Quarter, and will continue into Q1 2024.

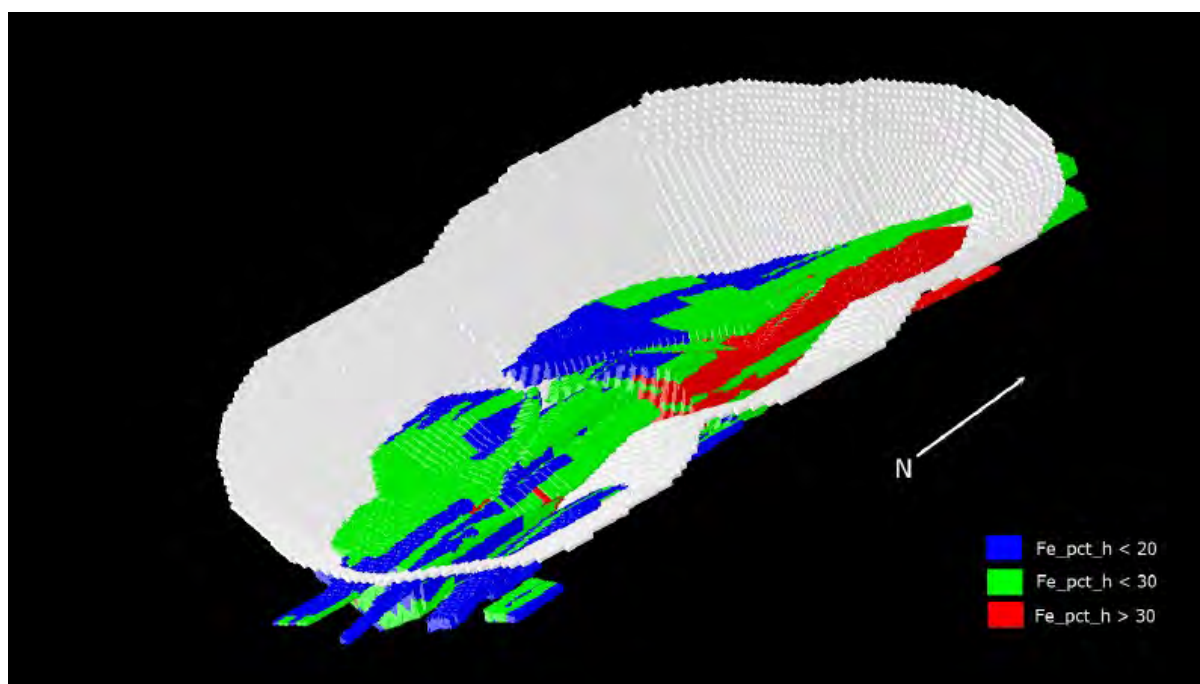


Figure 2. Fe1, Shell 24 isometric view.

Further work from Entech will include actual pit design and a preliminary mining schedule.

Project Study

It has been determined by Athena Management that to achieve a Pre-Feasibility level of confidence for the Byro Magnetite Project Study, significant further work programs are required. These include :

- Hydrology – TDEM survey to delineate water targets, and monitoring and test bores.
- Environmental – Level One Fauna survey
- Resource Definition drilling – further drill testing of satellite magnetite targets.

Given the lead times required for these inputs into the Pre-Feasibility Study, the Company will initially provide the market with a detailed Scoping Study with an appropriate level of detail for all study inputs achieved to date.

Byro South Resource Definition Drilling

Infill and extensional resource drilling for the Byro South Target has been refined and designed with a program of approximately 23 drill holes for 3,500m developed. This drilling program scheduled for August 2023 will test four magnetite lenses and orientation at the Prospect and build on the previous 22 Reverse Circulation ("RC") and Diamond drillholes drilled previously.

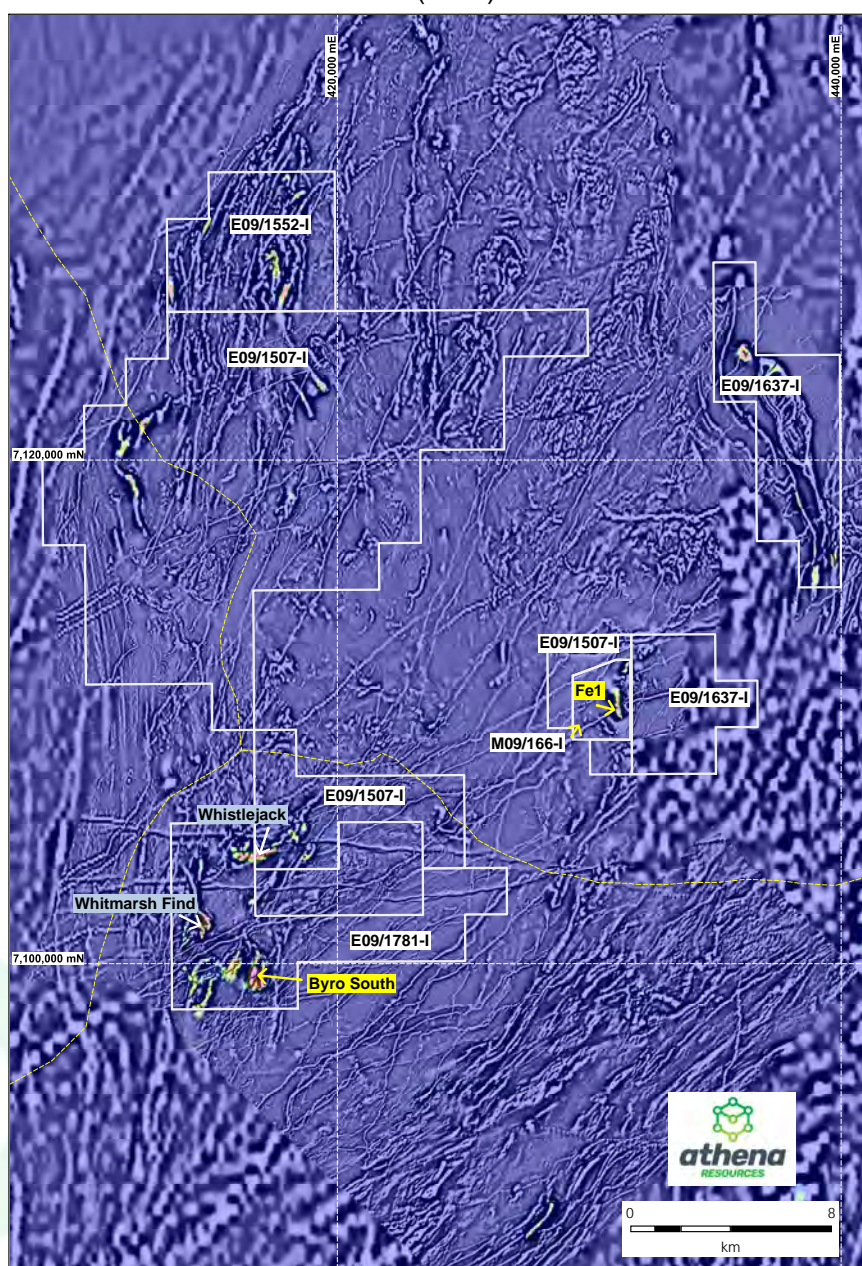


Figure 3 Byro Project magnetite Prospects

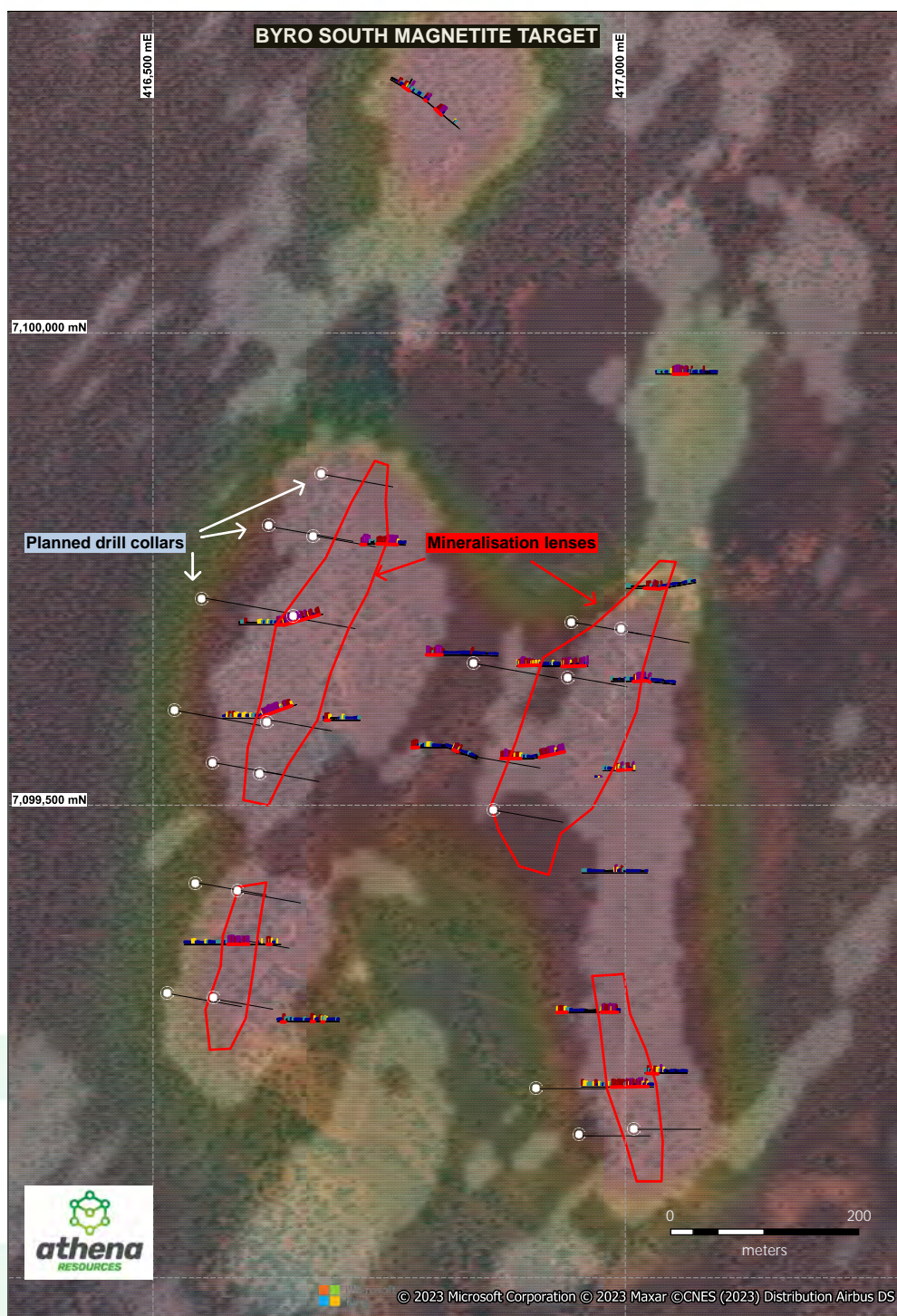


Figure 4. Byro South planned drilling



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RESOURCES

ASX Announcement
July 2023

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Links to relevant Exploration announcements during the quarter :

07/06/2023	<u>Investor Presentation</u>
13/06/2023	<u>Correction to misleading information</u>
13/06/2023	<u>Update on status of Exemption Applications</u>
13/06/2023	<u>Byro Base Metal Project Presentation</u>
19/06/2023	<u>Pre-Feasibility Study Update Metallurgy</u>



Corporate Activity for the Quarter

Management and Board

There were no changes to the Board during the quarter.

Mr Martin Dormer joined the management team full time as Head of Geology in April. Martin takes over the role previously assumed by Mr Liam Kelly.

Other Corporate

On 4 May 2023 the Company received a notice under section 249D of the Corporations Act to requisition a meeting of shareholders to consider resolutions to gain control of the company by changing the composition of the Board. The Notice was from Adroit Capital Investments Pty Ltd (and others) who had purchased shares ten days prior to the notice date to enable this action. Adroit had not been shareholders prior to that date.

On 22 May 2023 the Company issued a Notice of General Meeting to be held on 28 June 2023 to consider the proposed changes.

At the Meeting the resolutions were defeated by 468 million votes to 189 million votes.

At the date of this report Adroit is no longer a top twenty shareholder.

Shares and Options

There were no changes to Shares or Options on issue during the quarter.



Exploration expenditure

	Quarter	Year to Date
Information Systems	36,500	61,000
Travel	5,500	27,500
Field Camp	4,500	23,000
Surface Exploration	23,500	58,000
Geophysics and Remote Sensing	500	1,500
Ground Surveys	-	10,000
RC Drilling	1,000	17,500
Diamond Drilling	1,500	361,500
Metallurgy and Project Management	183,500	430,500
Tenement administration	19,000	75,500
Rent and Rates	43,000	167,000
	<u>318,500</u>	<u>1,203,000</u>

This expenditure is reported on an accrual basis.

Related Party Payments

During the period under review payments were made to related parties as follows:

During the period under review payments of fees and arrears were made to related parties in the sum of \$111,040 as follows:

	Services provided	b/fwd \$	Payable \$	Paid \$
Director				
Ed Edwards	Directors Fees	-	45,000	45,000
Hau Wan Wai	Directors Fees	-	12,000	12,000
Peter Newcomb	Directors Fees	-	12,000	12,000
Peter Newcomb	Consultancy	16,050	55,490	42,040
		<u>16,050</u>	<u>124,490</u>	<u>111,040</u>

Payables outstanding to related parties at the end of the quarter amounted to \$29,500.



This expenditure is reported on a payments basis excluding GST.

Links to relevant Corporate Announcements during the Quarter:

08/05/2023	Shareholder Notice sections 203D and 249D
22/05/2023	Notice of General Meeting/Proxy Form
28/06/2023	Results of Meeting

In addition to these specific announcements, the March Quarterly Activities Report and Quarterly Appendix 5B Cash Flow Report were lodged on 24 April 2023.

All Company announcements are available [here](#):

This announcement was authorised by the Board.

Yours faithfully

Ed Edwards
Managing Director
31 July 2023

CAUTIONARY NOTES AND DISCLOSURES

Disclosures

All data and Information of material nature referred to within this Report with reference to the Byro FE1 ore body have previously been reported on the ASX platform to meet the guidelines of the relevant JORC compliance reporting format at the time of data acquisition.

Cautionary Notes and Forward Looking Statements

This announcement contains certain statements that may constitute “forward looking statements”. Such statements are only predictions and are subject to inherent risks and uncertainties, which could cause actual values, results, performance achievements to differ materially from those expressed, implied or projected in any forward looking statements.

The Byro South, Whistlejack and the Mt Narryer ore bodies have had extensive drilling and metallurgical studies, drilling to date at the ore bodies supports aspects of the forward looking statement above. The quantity and grade reported for Byro South, Whistlejack and the Mt Narryer ore bodies are conceptual in nature. There has been insufficient exploration to define a mineral resource for each of the ore bodies. Further exploration is warranted to improve understanding and reduce uncertainty.

JORC Code Compliance Statement

Some of the information contained in this announcement is historic data that have not been updated to meet the 2012 JORC Code guidelines. Some information referred to in the announcement was prepared and first disclosed under the JORC Code 2004 edition. It has not been updated since to comply with the JORC Code 2012 edition on the basis that the information has not materially changed since it was last reported.

Competent Persons Disclosure

Mr Martin Dormer is an employee of Athena Resources and currently holds securities in the company.

Competent Person Statement

The information included in the report is based on information compiled by Mr Martin Dormer, a consultant to Athena Resources Limited. Mr Dormer is a Member of the Australasian Institute of Mining and Metallurgy (Member ID 304615), and the Australian Institute of Geoscientists (Member ID 7370). Mr Dormer has sufficient relevant experience in the styles of mineralisation and deposit type under consideration, and to the activity which he is undertaking, to qualify as a Competent Person as defined in “The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition)”. Mr Dormer consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

INTERESTS IN MINING TENEMENTS

Athena Resources Limited 100%	Tenement Type
Byro Exploration	E – Exploration License
E09/1507	
E09/1552	
E09/1637	
E09/1781	
E09/1938	
Byro Project Mining	M - Mining Lease
M09/166	
M09/168	
Byro Project Water	
L09/112	L – Miscellaneous Licence