

# METS Global Experience

# Projects and Technical Papers

## Trusted Consultants for 30+ Years.

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## > ACKNOWLEDGEMENTS

This document is a dynamic record of the knowledge and experience of personnel at METS Engineering Group Pty Ltd. As such it has been built upon over the years and is a collaborative effort by all those involved. We are thankful for the material supplied by and referenced from various equipment manufacturers, vendors, industry research and project partners.



*“Provide engineering and technical solutions that are responsive to our clients’ needs”*

- > Working globally since 1988
- > Dynamic and innovative niche consultancy
- > Dedicated team providing customised service
- > Specialist in Mineral Processing & Engineering Projects
- > Unique solution finder



- > Copper
- > Lead / Zinc
- > Gold
- > Iron Ore (magnetite and haematite)
- > Vanadium
- > Mineral Sands
- > Nickel
- > Rare Earths
- > Uranium
- > Manganese
- > Alumina
- > Phosphates
- > Lithium
- > Graphite



# Global Project Experience



## Copper

Aditya Birla – Nifty Operations - Cathode Prediction Project Optimisation  
Aditya Birla – Nifty Operations – Site Restart Estimate  
Barrick (Australia Pacific) Ltd – Jabal Sayid Project – Testwork  
Birla Nifty Pty Ltd – Nifty Operations - Heap Washing Evaluation  
Blackthorn Resources-Kitumba Project-Scoping Study  
Citadel Resources - Jabal Sayid Project – Pre-Feasibility Study  
Genesis Minerals Ltd - Merceditas Project – Metallurgical Testwork  
Juff Holdings - Evelyn Project – Metallurgical Testwork  
National Iranian Copper Co - Sungun Project - Concentrator Plant Expansion  
Sandfire Resources NL – DeGrussa Copper Oxide Project – Heap Leach Study  
Snowden Mining Consultants – CopperCo Lady Annie Project- Heap Leach Review  
Snowden Mining Consultants - Matrix Metals Project Morpheus – Project Valuation  
Snowden Mining Consultants – Phu Bia Project - ITE Review  
Xstrata Copper – Ernest Henry – Training  
Zambezi Resources - Cheowa Project - Client Representative  
Zambezi Resources - Cheowa Project – Metallurgical Testwork  
Zambezi Resources - Kangaluwi Project -Metallurgical Consulting & Testwork

## Copper (Copper/Gold)

Anglo Australian Resources NL - Koongie Park Project – Metallurgical Testwork  
Aztec Resources - Golden Grove – Project Development  
Baobab Resources PLC - Mundonguara Project - Sighter Testwork  
Bougainville Copper - Metallurgist  
Copper Resources Corporation - Haib Project - Development Study  
Copper Resources Corporation - Haib Project - Study Review & Analysis  
Copper Resources Corporation - Hinoba Project - Beneficiation Testwork  
Copper Resources Corporation - Hinoba Project - Process Design Study  
Copper Resources Corporation - Minière Musoshi Kinsenda Project - Detailed Design  
Copper Resources Corporation - MMK Project - Bankable Feasibility Study, Deeper Ore Metallurgy, Feed Project, Feasibility Study, and Copper Concentrates Process Options Study  
Copper Resources Corporation – MMK Project - Electric Arc Furnace Optimisation  
Copper Resources Corporation - St. Ives SAG Mill - Due Diligence  
Crimson Ant – Lohan Tailings Rehab Project – Feasibility Study  
Croesus Mining NL - Project Alcatraz – Due Diligence  
Emerson Resources - Tennant Creek Project – Conceptual Study

## Copper (Copper/Gold)

Emmerson Resources - Tennant Creek Projects – Scoping Study  
Giants Reef Mining - Tennant Creek Project – Due Diligence  
Golder Associates – Due Diligence  
Independent Engineers - Mirador Project- Due Diligence  
Independent Engineers- La Paloma Project – Metallurgical Testwork  
Marengo Mining Ltd – Testwork Program Audit  
Matrix Metals Ltd – Leichhardt Operations - Mt Cuthbert Assessment  
National Iranian Copper Co - Sarcheshmeh Project – Electrical & Automation Engineering  
National Iranian Copper Co - Sarcheshmeh Project- Plant Audit and Recommissioning  
Newmont Mining Corp - Gindalby Minjar Project - Risk Analysis  
Snowden Mining Consultants - Chelopech Project – Due Diligence  
Ted Mein & Associates - Marian Deposit – Metallurgical Testwork  
Ted Mein & Associates - Queen River Tailings Project – Metallurgical Testwork  
Universal Resources Ltd - Roseby Project – Metallurgical Consulting  
Universal Resources Ltd - Roseby Project - Metallurgical Development  
Universal Resources Ltd – Roseby Project -Copper Heap Leach Due Diligence

## Copper (Copper/Lead/Zinc)

Anglo Australian Resources NL – Santiago  
Bass Metals – Panorama Project – Due Diligence

## Copper (Copper/Cobalt/Zinc/Gold)

Vulcan Resources – Kylylahti Copper / Cobalt Project - Due Diligence

## Zinc (Zinc/Copper)

Bass Metals - Hellyer Flotation Plant – Que River Ore Trial  
Independent Engineers - Dairi Project - Due Diligence  
Independent Engineers - Kazak Project – Due Diligence  
Newmont Australia - Elura Zinc Project  
Snowden Mining Consultants – Confidential Bank - Rapu Rapu Project - Due Diligence  
Snowden Mining Consultants - Lady Loretta Project - CAPEX & OPEX  
Zinc Corporation - Broken Hill - Plant Metallurgist



# Global Project Experience

## Lead/Zinc

Aztec Resources - Golden Grove Project - Commissioning  
Bass Metals – Hellyer Project - Plant Valuation Bass Metals – Beltana Project - Due Diligence  
Bass Metals – Hellyer Project - Treatment Study  
Brittania Lead Refinery - Plant Metallurgist  
Magellan Metals Pty Ltd – Reagents Facility - Bagging Options Study  
Magellan Metals Pty Ltd –Reagents Facility - Engineering Design & Purchase Reagent System  
PasmaInco - Lead/Zinc Smelter Plant Metallurgist  
Snowden Group – Hellyer Mill – Due Diligence  
TNG Ltd – Manbarrum Project – Scoping Study  
Trafford Resources Ltd – Telephone Dam – Sighter Testwork  
Western Metals – Parys Mountain Base Metals Project – Metallurgical Consulting

## Gold/Lead/Zinc

Independent Engineers - East Santa Cruz Project - Core Scoping Study

## Gold

ABM Resources NL – Buccaneer Gold Project - Testwork  
Acil Tasman Pty Ltd - Kimberley Study - Tanami Regional Minerals Study  
Agincourt Resources Ltd - Andhorinhas Project – Due Diligence  
Agincourt Resources Ltd - Andorinhas Project – Due Diligence  
Agnew Gold - Electrowinning Consulting Advice  
Allied Gold Ltd – Simberi Project - Cyanide Mitigation Desktop Study  
Amlib United Minerals - Kokoya Gold Project – Pre-Feasibility Study Review  
Anglo Australian Resources NL –Mandilla Project – Toll Milling  
Apex Minerals NL – Wiluna Gold Mine – Consultancy  
Apex Minerals NL – Wiluna Project – Audit  
Aphrodite Gold – Aphrodite Gold Project – Scoping Study, Feasibility Study Scope of Work & Testwork Management  
Aphrodite Gold – Chameleon Project – Sighter Testwork  
Archipelago Resources - Minahasa Project -Power Station Acquisition and Relocation Project  
Archipelago Resources - Mt Muro Project – Financial Modelling, Scoping Studies & Plant Evaluation  
Archipelago Resources - Mt Todd Project -Equipment Evaluation  
Archipelago Resources – Toka Tindung Project – El Tambo Plant Relocation, Metallurgical Consulting, Feasibility Study & Plant Valuation & Tender for URGM Plant Relocation

## Gold

Ashburton Minerals LTD – Maluku Gold Project – Processing Review  
Barrick (Australia Pacific) Ltd – Plutonic Gold Mine – Simulation  
Barrick Gold Corporation - Lawlers Project - Plant Throughput Study  
Bass Metals - Henty Project - Due Diligence  
Bass Metals - Mt Charter Project –Polymetallic Deposit Preliminary Testwork  
Beacon Minerals Ltd – Barlee Gold Project – Testwork  
Central China Goldfields - Rakyon Project – Due Diligence  
Commonwealth Bank of Australia - Mercator Project - Due Diligence  
Crew Gold Corporation- Lefa Corridor Project - Plant Commissioning  
Croesus Mining - Norseman Operation – Metallurgical Review  
Croesus Mining - Ravenswood Project - Due Diligence  
Croesus Mining – Sons Of Gwalia Southern Cross Project  
Croesus Mining Ltd - Central Norseman Project – Due Diligence  
CSA Australia – Indonesian Gold Mine - Due Diligence  
CSA Global – RMC Gold Scoping Study  
Eclipse Resources - Dizon Tailings Project – Study Review  
Elekdra Diamonds NL - Coyote Project – Metallurgical Evaluation  
GBM Minerals Engineering Consultants - Centamin Sakurai Project – Testwork Review  
GBS Gold - Geocoat Project - Plant Design  
GBS Gold - Pine Creek Project – Metallurgical Consulting  
GBS Gold - Terra Gold Mining – Pre-Feasibility Study  
GBS Gold - Toms Gully Project – Metallurgical Review  
GHG Mining - Mt Tymn & Ringwood – Metallurgical Review  
Giants Reef Mining - Chariot Project  
Glencoe Gold - Pilbara Gold Project  
Gold Road Resources Ltd – Yamarna Gold Project – Scoping Study  
Golder Associates – Golder Gold Project – Due Diligence  
Golder Associates – Hassai Gold Project – Due Diligence  
Golder Associates – Macedonian Gold Project – Scoping Study  
Goudhurst Pty Ltd – Project Met Syama Gold Mine – Pre-Feasibility Study  
Goudhurst Pty Ltd – Project Met Syama Gold Mine – Specialist Services  
Greater Pacific Gold Ltd – Union Reefs Gold Mine - Plant Valuation  
Grosvenor Gold – Fortnum Gold Plant – Capacity Simulation and Testwork



# Global Project Experience

## Gold

Guinor Gold Corporation – Lefa Corridor Project - Operating & Commissioning Manuals  
Harbour Lights Mining – Haib Project - Bacterial Leach Pilot  
Higginsville Mining Ltd - Greenfields Mill – Gold Losses  
Homestake Gold of Australia - Mineral Processing Course  
Independent Engineers - Emerson Project - Due Diligence  
Independent Engineers - Maud Creek Project – Metallurgical Testwork  
Independent Engineers - Raub Tailings Project – Metallurgical Consulting  
Independent Engineers - Simberi Allied Gold Project - Operating Manuals & Metallurgical Consulting  
Independent Engineers - Tanjianshan Project – Due Diligence  
Investec Bank (Australia) Ltd - Crescent Gold - Girth Gear Expert Advice  
Investec-Mercator Project - Due Diligence  
Kalgoorlie Consolidated Gold Mines - Fimiston Project - Phase 2 Commissioning  
Kenor Norway - Fayalala Project – Beneficiation Metallurgical Testwork  
Kenor Norway - Kelian Project - Plant Audit  
Kenor Norway - Kori Kollo Project - Plant Assessment  
Kenor Norway - Lefa Corridor Project –Beneficiation & HPGR Testwork  
Kenor Norway - Lero Gold Project – Client Representative for Metallurgical Matters  
La Mancha Resources - Frogs Leg Project- Underground Metallurgical Testwork  
Lloyd George Mining – Metallurgical Accounting Review  
Macquarie Bank – Las Lagunas Project - Due Diligence  
Macquarie Bank – Mungari Gold Project – Due Diligence  
Manhattan Gold - Metallurgical Consulting  
Materials Insight - Granny Smith Mine - Mill Replacement  
Medusa Mining Ltd - Co-O Project – Technical Review  
Medusa Mining Ltd - Philsaga Project – Due Diligence  
Medusa Mining Ltd - Saugon Project – Plant Valuation  
Mercator Gold - BlueBird Project - Due Diligence  
Midas Resources – Sons Of Gwalia Red October Project – Due Diligence  
Mines & Resources Australia - Kundana Plant - Purchase & Relocation  
Mines & Resources Australia Pty Ltd - White Foil Project - Ore Treatment  
Mines and Resources Australia - Mungari Project - Pre-Feasibility Study  
Mines and Resources Australia - White Foil Project - Testwork Study Toll Milling  
Mining Project Investors - Metallurgical Accounting  
Monarch Gold - Davyhurst Project - Plant Audit & Special Mineral Processing Course

## Gold

Mount Magnet South NL – Kirkalocka Project – Feasibility Study  
Mungari East Joint Venture - Frogs Leg Project – Pre-Feasibility Study  
N M Rothschild and Sons Ltd - Crescent Gold Laverton Project – Due Diligence  
Navigator Resources Ltd – Leonora Project – Pre-Feasibility Study  
Newcrest Mining Ltd – Telfer Gold Mine – Specialist Services  
Newmont Mining Corp – Jundee Plant – Training  
Newmont Mining Corporation - Waihi Project - Scoping Study  
Nex Metals Explorations Ltd - Kookynie Gold Project – Orient Well Dump Leach  
Norton Gold Fields – Paddington Gold Mine – Specialist Services/Labour Hire, Optimisation & Plant Audit  
Octagonal Resources – Maldon Mill – Audit  
Outotec – Turkish Gold Project – Testwork and Scoping Study  
Pacrim Energy – Redcliffe Project – Metallurgical Testwork  
Paddington Gold Mine – Optimisation  
Quartzite – Georgia Project – Heap Leach Technical Audit & Annual Metallurgical Accounts Audit  
Quartzite – Heap Leaching Operations Project – In Process Determination/Audit  
Quartzite Ltd-Madneulli Tailings Project-Scoping Study  
Ramelius Resources Ltd – Mt Magnet – Consultancy & Specialist Services/Labour Hire  
Reed Resources – Comet Vale Project – Toll Milling Supervision  
Regis Resources - Moolart Well - Testwork & Engineering Data  
RM Capital – Cyanide Leach Tests  
RMB Resources - Carosue Dam Project - Plant Valuation  
RMG Copper Ltd – Quartzite – Audit  
Saracen Mineral Holdings – Carosue Dam – Operational Audit  
Saudi Arabian Gold Project – Feasibility Study  
Sino Mining - Jianchaling Project- Site Visit  
Snowden - Baomahun Gold Project – Metallurgical Consulting  
Snowden - Mirah Project – Technical Review  
Snowden – Rawas Project - Heap Leach, CIP & Merrill Crowe  
Snowden Mining Consultants - Baomahun Project - Pre-Feasibility Study  
Snowden Mining Consultants - Golden Pride Syama Ravenswood - Desktop Study





# Global Project Experience

## Gold

Snowden Mining Consultants - Jardim do Ouro Project - Serabi Mining  
Snowden Mining Consultants - Meekatharra Project - Competent Persons Report  
Snowden Mining Consultants - Mirah Project - Review  
Snowden Mining Consultants - Project Daughter - Due Diligence  
Snowden Mining Consultants - View Gold - Metallurgical Opinion  
Snowden Mining Consultants - Way Linggo Project - Due Diligence  
Snowden Mining Consultants - Westonia Project  
Sons of Gwalia - Carosue Dam Operations - Metallurgical Accounting Audit  
Sons of Gwalia - Receiver Manager Duties  
Southern Cross Goldfields - Marda Gold Project - Simulation  
Southern Cross Goldfields - Dulcie Heap Leach Project - Testwork  
SRK Consulting - Masbate Gold Project - Due Diligence  
SRK Consulting - Project Blackbird - Metallurgical Consulting  
St Barbara Mines - Gwalia Process Plant - P&ID Checks, Risk Assessment & Operating Manuals  
St Barbara Mines - Marvel Loch Project - Plant Audit  
St Barbara Mines NL - Tasiast Project - Metallurgical Consulting  
Sumatra Copper Gold - Rawas Project - Higher Throughput Scoping Study & Pre-Feasibility Study  
Titan Resources NL - Kinross Gold Norseman Project - Acquisition Due Diligence  
Trafford Resources Ltd - Weesnanna Gold Project - Scoping Study  
Troy Resources - Project Hadrian - Due Diligence  
Troy Resources - West Omai Gold Project - Consulting  
Troy Resources NL - Andorhinas Project - Lagoa Seca Testwork  
Troy Resources NL - Antena Sul Project - Metallurgical Testwork  
Troy Resources NL - Bell Chambers Project - Metallurgical Testwork  
Troy Resources NL - Casposo Mill - Simulation  
Troy Resources NL - Cornishman Ore Treatment - Consulting Advice  
Troy Resources NL - Goias Velho Project - Testwork & Flowsheets  
Troy Resources NL - Lord Henry & Lord Nelson Burdekin - Heap Leach Viability Project  
Troy Resources NL - Metallurgical Accounting  
Troy Resources NL - Mill Throughput Calculations  
Troy Resources NL - Mina Sertao Project - Process Optimisation & Metallurgical Testwork  
Troy Resources NL - Paulsens Project  
Troy Resources NL - Resin-In-Pulp Technology - Expert Advice

## Gold

Troy Resources NL - Sandstone Project - Crushing Plant Audit, Metallurgical Audit & Crushing Plant Capacity Improvement  
Troy Resources NL - Ultra Fine Grinding - Expert Advice  
Troy Resources NL - Xupe Project - Metallurgical Testwork  
Vatukoula Gold Mines - Definitive Study  
Vector Resources - Gwendolyn Gold Project - Feasibility Study and Testwork  
View Resources - Bronzewing Project - Plant Valuation  
View Resources - Bronzewing Project - Re Commissioning  
View Resources - Ortiz Project - Due Diligence

## Iron (Hematite, Magnetite, Iron Sands)

A&M Minerals - Malobog Iron Sands Project - Testwork  
Accent Resources - Magnetite Range - Pre-Feasibility Study & Due Diligence  
Atlas Iron - Iron Ore Due Diligence  
Behre Dolbear Australia - Argyle Project - Due Diligence  
Behre Dolbear Australia - Fortescue Metals Project - Due Diligence  
Behre Dolbear Australia - Mt Gibson Project - Due Diligence  
Behre Dolbear Australia - Tallering Peak - Process Review  
BlueCrest Capital Management - Fortnum Gold Plant - Scoping Study  
Brazilian Metals Group Ltd - Gema Verde Group - Scoping Study  
BrightStar Resources - Maude Creek Gold Project - Due Diligence  
Cape Lambert Iron Ore Pty Ltd - Cape Lambert Project - Metallurgical Testwork  
CP Mining Management - Mineralogy Magnetite Project  
Eagle Bay Resources NL - PNG Iron Sands Project  
Eastern Iron Ltd - Hawkwood Magnetite Project - Metallurgical Testwork  
FMG - Funding Due Diligence  
Goldman Sachs - Iron Ore Review  
Haggarty Nominees - Ore Sample Assay  
Ironclad Mining Ltd - Wilcherry Hill - Feasibility Study Review  
Iron Road - Central Eyre Iron Project - PFS  
Iron Road Ltd - Gawler Iron Project - Testwork  
Jackson MacDonald - BHP - Expert Witness  
Logicamms - Brazilian Iron Ore Project - Testwork and Pre-Feasibility Study Review





# Global Project Experience

## Iron (Hematite, Magnetite, Iron Sands)

Macarthur Minerals – Ularring Hematite Project – Beneficiation Testwork Management

Melrose Gold Mines Ltd – Metallurgical Testwork

Metaliko Resources – Anthill Project – Sighter Testwork

Mindax – Mt Forrest – Two Day Workshop

Minotaur-Mutooroo Iron Ore Project

Navigator Resources - Cummins Range REO Project

Norseman Gold – Lady Miller Magnetite Project – Sighter Testwork

Northern Star Resources – Mount Olympus – Metallurgical Testwork

NSL – Indian Iron ore Project – Testwork

Portman Mining - Magnetite Study

POSCO – Roy Hill Project – Consulting

Rio Tinto - Mt Tom Price - Metallurgical Work

Rio Tinto - Paraburdoo - Metallurgical Work

Rio Tinto Iron Ore – Fugitive Dust Investigation

Rio Tinto Iron Ore – Hope Downs Project – Feasibility Study

Royal Resources - Warrieder Project - Preliminary Metallurgical Assessment

Scandinavian Recourses - Kiruna Project - Testwork

Shree Minerals – Hematite – DSO Testwork

Snowden Group – Project Rocket – Due Diligence

Snowden Mining Consultants – TTR Iron Sands -Desk Top Review

SRK Consulting - Mt Gibson Project - Due Diligence

Talisman Mining – Wonmunna Project - Metallurgical Testwork

TTR-NZ Iron Sands-Scoping Study

Venus Metals – Yalgoo Iron Ore Project – Testwork & Scoping Study

Viking Ashanti Ltd – Akoase Gold Deposit – Sighter Testwork

Western Desert Resources – Roper Bar Iron Ore Project – Metallurgical Review

Wright Prospecting – Audit

Zenith Minerals – Mt Alexander Magnetite Project – Due Diligence

## Vanadium (Vanadium/Titanium, Molybdenum/Vanadium)

Apollo Management Ltd – Windimurra Vanadium Project – Due Diligence

Atlantic Ltd – Windimurra Vanadium Project – Plant Audit

Behre Dolbear Australia - Finland Vanadium Project – Pre-Feasibility Study

China Vanadium Project - Metallurgical Consulting

Intermin Resources Ltd - Molybdenum and Vanadium Extraction Literature Search

## Vanadium (Vanadium/Titanium, Molybdenum/Vanadium)

Reed Resources – Barrambie Project - Bankable Feasibility Study Scope of Work, Atmospheric Leach & Recovery Vanadium, Optimisation Testwork & Oxalate Supply

Reed Resources Ltd – HPAL TIMAG Concentrate –Metallurgical Testwork

TNG Ltd – Mount Peake Project – Testwork & Pre-Feasibility Study , Feasibility Study & Scoping Study

Vanadium Australia Pty Ltd - Plant Beneficiation Study

## Mineral Sands (Garnet, Titanium Dioxide and Titanium Chemicals)

Archipelago Resources – Vietnam Mineral Sands Project- Scoping Study

GMA Garnet Pty Ltd - New Garnet Application Project

Hansung Elcomtec Co Ltd - Sembiru Mineral Sands Project

McRae Clough – Indonesian Mineral Sands Project

Millenium Inorganic Chemicals - Fume Shed Scrubber Upgrade

Olympia Resources - Garnet Project

R Coles and Associates - Sand Grinding Project

Tiwest - Chandala - Operating Manuals

## Nickel

Breakaway Resources – Andrews Project

Breakaway Resources Ltd – The Horn Project - Metallurgical Characteristics

Consolidated Minerals – Due Diligence

Fox Resources - Radio Hill Plant

Halcyon Resources – Halcyon Project - Heap Leach Study

Heron Resources – Metallurgical Support

Independent Engineers - Honeymoon Well - Due Diligence

Independent Engineers - Thundelarra - Feasibility Study Expert Witness

LionOre - Black Swan Nickel, Emily Ann Project & Honeymoon Well

McRae Clough – Laterite Project - Scoping Study

OM Group – Cawse Project - Contract Metallurgist

Poseidon Nickel - Windarra Project - Heap Leach Support

Preston Resources – Marlborough Project - Due Diligence

Rusina Mining NL – Acoje Project - Ferronickel Study

Sally Malay Mining - Nickel Project - Performance Guarantee

Vulcan Resources – Kuhmo Project Finland



# Global Project Experience

## Nickel

Snowden Mining Consultants - Black Swan Nickel Project  
 Snowden Mining Consultants – Ferronickel Serbia - Competent Persons Report  
 Snowden Mining Consultants –Ferronickel Macedonia - Competent Persons Report  
 Thundelarra Exploration – Copernicus Project – Feasibility Study  
 Titan Resources NL - Armstrong Nickel Project  
 Vulcan Resources - Kuhmo Project - Scoping Study  
 YTC Resources - Nickel Project - Due Diligence  
 Zambezi Resources - Mitaba River Project

## Rare Earths (Tantalite, Niobium)

Aus American Mining – La Paz REE Project – Scoping Study  
 Aztec Exploration - Brockman Niobium, Tantalum RE Project  
 Aztec Resources – Mt Weld Rare Earths – Metallurgical Analysis  
 Hastings Resources PTY LTD – Hastings Rare Metal Project - Testwork  
 Pella Energy – Ak Terek Project

## Uranium

African Investments Group Congo SA – Uranium Phosphate Project  
 AMC Consultants – Uranium Consulting  
 Contact Uranium Ltd – Kamushan Project  
 Cominco S.A – Hinda Uranium Project – Metallurgical Testwork  
 Encounter Resources - Hillview Project –Testwork  
 Energy Ventures – Aurora Uranium Project – Scoping Study  
 Extract Resources - Husab Project  
 Jackson Gold - Rio Colorado Project - Polymetallic Study  
 Reliance Industries Ltd – Uranium Processing Advice  
 Rio Tinto – Kintyre  
 Uran Ltd – Grants Ridge Project - Mine Water Issues  
 Uranex NL – Manyoni Project- Testwork Planning & Management  
 Uranex NL – Thatcher Soak Project – Testwork Management  
 Wild Horse Energy – Messek Hills Uranium Project

## Manganese

Energia Minerals Ltd - Carley Bore ISL Project – Bottle Roll Leach Test  
 Golder Associates Pty Ltd - Bootu Creek Project - Due Diligence & Metallurgical Accounting  
 Golder Associates Pty Ltd - OM Manganese – Commonwealth Bank Funding Advice  
 Spiifire Resources Ltd – Woodie Woodie Project – Testwork Management

## Alumina

Alcoa - B30 Project  
 Norton White – Expert Witness  
 Worsley Alumina - Collie Operations - Efficiency Upgrade

## Others

### *Bauxite*

Australian Bauxite Ltd – Metallurgical Testwork  
 Snowden Group – West Kalimantan Bauxite Project – Metallurgical Testwork Review

### *Cement*

Lafarge - Crushing Plant Expansion

### *Chromite*

Archipelago Resources – Co Dinh Project – Metallurgical Testwork

### *Graphite*

Eagle Bay Resources  
 Uley Graphite Resources  
 Castle Minerals – Testwork  
 TNG Ltd - Testwork

### *Kaolin*

WA Kaolin Ltd - Gabbin Kaolin Project

### *K<sub>2</sub>SO<sub>4</sub>*

Rewards Minerals Ltd - Potassium Sulphate Schematic Diagram

### *Lithium*

Altura Mining – Pilgangoora Lithium Project – Feasibility Study  
 Altura Mining – Altura Spodumene Project – Sighter Testwork  
 Golder Associates – Due Diligence  
 Project Daughter – Greenbushes – Due Diligence

### *Phosphates*

Maaden Phosphate Company - Specialist Services & Testwork  
 Cominco S.A. – Hinda Uranium Phosphate Project – Metallurgical Testwork

### *Platinum*

Niplats – Speewah Project  
 Thundelarra Exploration Ltd - East Kimberley Platinum Project  
 Strata Minerals – Potash Gulf of Carpentaria – Due Diligence  
 Rio Tinto - Kaolin Project – Pilot Plant

### *Potash*

### *Salt*

Onslow Salt Pty Ltd - Onslow Salt Project

### *Sulphur*

WMC - Metallurgical Consulting

### *Talc*

WMC - Talc Operations Beneficiation

### *Tungsten*

Hazelwood Resources - Cooke's Creek Project

### *Zeolites*

Quantum Filtration Media - Zeolite Project

### *Zircon*

Astron Limited – Zircon Project – Due Diligence



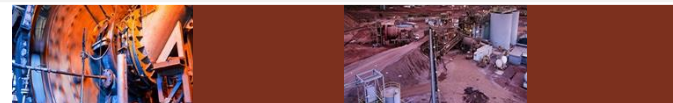
Date	Conference	Title
2019	ALTA 2019, Perth WA	Producing Ferronickel as a Process Alternative for Nickel Laterite Processing
2019	ALTA 2019, Perth WA	Technical Options for Processing a Lithium Clay Ore and Achieving High Purity Lithium Carbonate
2019	ALTA 2019, Perth WA	Technology Options for Development of a Remote Large Low Grade Copper Deposit
2019	ALTA 2019, Perth WA	Technology Options for Processing a Gold Ore with Variable Refractory Characteristics
2019	AusIMM Lithium 2019, Perth WA	The Flotation of Lithium Minerals from Hard Rock Deposits from Laboratory Testwork to Commissioning
2019	Battery Minerals 2019, Perth WA	Critical Aspects of Due Diligence for Battery Minerals Projects Seeking Funding
2019	CIM 2019, Perth WA	Challenges of Beneficiating Low Grade Iron Ores
2019	CIM 2019, Perth WA	Lead Zinc Separation Issues in a Polymetallic Ore
2019	CIM 2019, Perth WA	The Challenges of Tailings Processing
2019	COM 2019, Perth WA	Technology Options and Innovation for Copper Heap Leaching
2019	COM 2019, Perth WA	Options for Removing Arsenic and Talc from a Copper Concentrate
2019	Informa Lithium & Battery Mins 2019, Perth WA	Critical Issues with the Beneficiations of Lithium Minerals from Hard Rock Deposits
2019	Informa Minerals Sands, Perth WA	Recent Strategic Advances with Mineral Sands Beneficiations
2019	Iron Ore 2019, Perth WA	Downstream Value Adding of Western Australian Iron Ores
2019	Iron Ore 2019, Perth WA	Will Titaniferous Magnetite be a Significant New Source of Titanium Pigment (TiO <sub>2</sub> )
2019	World Gold, Perth WA	Flowsheet Development of a Refractory Gold Ore to Minimise Arsenic Issues in the Environment
2019	World Gold, Perth WA	The Bottle Creek Gold Project Revisited
2019	World Gold, Perth WA	Flowsheet Options for Processing Copper & Gold Copper Ores
2018	Lithium, Perth WA	A Metallurgical Checklist for Bank Finance Due Diligence of Hard Rock Lithium Projects
2018	Uranium, Perth WA	Removing Uranium and Thorium To Produce High Quality Zircon Sand



Date	Conference	Title
2018	COM 2018, Perth WA	Sulphide Mineral Concentrate Upgrade Using Hydrometallurgy
2018	ALTA 2018, Perth WA	Transitioning from Single Stage SAG mil Through to Fine Crushing and Ball Mining
2018	ALTA 2018, Perth WA	Copper Cobalt Gold Project Flowsheet Development
2018	ALTA 2018, Perth 2018	Technology Options For Processing Complex and Double Refractory Gold Ore
2018	Battery Minerals 2018, Perth WA	Critical Metallurgical Aspects For Battery Mineral Projects
2018	Mineral Sands 2018, Perth WA	Will Titanium Hardrock Be A New Source Of Titanium Pigment
2017	COM 2017, Perth WA	Options to Remove Arsenic and Talc from Copper Concentrates to Improve Marketability
2017	COM 2017, Perth WA	Beneficiation of Lithium Ores into Concentrates and Processing Options to Produce Battery Grade Lithium Carbonate
2017	COM 2017, Perth WA	Gold Ore Mineralogical Factors that Influences Processing and Flowsheet Selection
2017	ALTA 2017, Perth WA	The Challenges of Recovery of Lithium from Silicates and Optimising Financial Returns
2017	ALTA 2017, Perth WA	Finding a Solution for a Double Refractory Gold
2017	Iron Ore 2017, Perth WA	The Geometallurgy of Titanomagnetites that affect Vanadium Extraction
2017	Mineral Sands 2017, Perth WA	Technical Options For Producing Premium Zircon
2017	MetPlant 2017, Perth WA	Copper Smelting Process Selection Studies and Total Process Technology Considerations
2017	MetPlant 2017, Perth WA	Carbon Capture Storage Process Technology Considerations
2016	ALTA 2016, Perth WA	Beneficiation Of Spodumene Into Concentrate And Further Processing To Produce Battery Grade Lithium Carbonate
2016	ALTA 2016, Perth WA	Processing High Clay Gold Ores
2015	MetPlant 2015, Perth WA	Karouni Gold Project From Core Drill To Commissioning
2015	ALTA 2015, Perth WA	White Dam Dump Leach Gold Project Due Diligence And Actual Project Production Performance



Date	Conference	Title
2013	<i>IIR Bulk Handling Materials Week 2013, Brisbane, QLD.</i>	High Clay Ores – A Mineral Processing Nightmare
2013	<i>ALTA 2013, Perth, WA.</i>	Cyanide Destruction Recovery Options and Management Strategies for Gold Plant Tailings
2013	<i>ALTA 2013, Perth, WA.</i>	Current Challenges with Processing of Uranium Ores
2012	<i>COM 2012, Niagara Falls Canada.</i>	The Use of QEMSCAN for Ore Characterisation
2012	<i>COM 2012, Niagara Falls Canada.</i>	Critical Aspects of Low Grade Ore Beneficiation
2012	<i>Fe TECH Conference 2012, Perth WA.</i>	Transportation Issues, Magnetite Concentrate From Mine to Port
2012	<i>IIR Iron Ore Project Development &amp; Logistics Conference 2012, Perth WA.</i>	Latest Developments Transporting An Ore Through a Pipeline
2012	<i>ALTA 2012, Perth WA.</i>	Geometallurgical Mapping of a Complex Gold Ore Body to Manage Process Risk and Validate the Proposed Process Flowsheet
2012	<i>ALTA 2012, Perth WA.</i>	Processing of Gold Copper and Copper Gold Ores with Flowsheet Development and Strategies
2012	<i>SME Annual Meeting 2012, Seattle USA.</i>	Water Management Issues with Processing Magnetite Ores
2011	<i>Conference of Metallurgists 2011, Montreal Canada.</i>	Insitu Leaching of Gold Deposits
2011	<i>AusIMM Metplant Conference 2011, Perth, WA.</i>	Sensible Cost Cutting for Resource Projects



Date	Conference	Title
2011	AusIMM Iron Ore Conference 2011, Perth, WA.	The Central Eyre Iron Ore Project- Process Selection and Design
2011	AusIMM Metplant Conference 2011, Perth, WA.	The Casposo Gold-Silver Project- Process Selection and Design
2011	Wet & Sticky Ore Conference 2011, Perth, WA	Clay, A Mineral Processing Nightmare
2011	ALTA 2011, Perth WA	The Merrill Crowe Process vs. Carbon in Pulp-Process Selection
2011	Valmin 2011, Brisbane QLD	Metallurgical Errors – Where Things Went Wrong
2010	Mining Magazine Congress 2010	Advances in Gold Process Recovery From Complex Ores
2010	COM, Vancouver Canada.	The Challenges Ahead for Mineral Processing & Resource Projects
2010	COM, Vancouver Canada.	Feasibility Studies Truths and Half Truths
2010	AusIMM Gravity Gold Conference, Ballarat Vic.	Selection Sizing and Developing the Optimum Gravity Gold Circuit for Your Project
2010	AusIMM Gravity Gold Conference, Ballarat Vic.	Minimum Industry Goldroom Security Standards
2010	AusIMM International Uranium Conference, Adelaide SA.	Uranium Metallurgical Development Considerations for In Situ Leach Process Plants

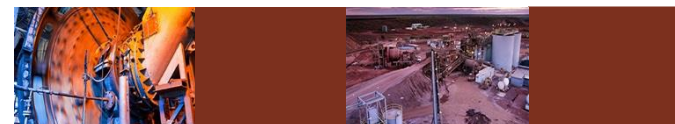




Date	Conference	Title
2010	Precious Metals Conference, Falmouth UK.	Process Plant Design Considerations for High Silver Gold Ores
2010	AusIMM Sampling Conference, Perth WA.	The Marvel Loch Crusher Product Sampling System
2010	ALTA, Perth WA.	Pitfalls to Avoid When Undertaking Metallurgical Testwork on Gold Ores
2009	AusIMM, Tenth Mill Operators Conference, Adelaide SA.	Metallurgical Accounting Standards in Process Plants
2009	AusIMM, Tenth Mill Operators Conference, Adelaide SA.	Implementing Process Design Changes in Process Plants
2009	Water In Mining, AusIMM Conference, Perth WA.	Water Management Issues With Processing Magnetite Ores,
2009	AusIMM Iron Ore Conference, Perth WA.	Magnetite Ore Processing Testwork Strategies Applied to Different Western Australian Projects
2009	AusIMM Uranium Conference, Darwin NT.	Keys To Testing Uranium Ores & Trends In Flowsheet Development & Innovations
2009	AMEC International Mining Congress, Perth WA.	Project Optimisation Studies-A Solution To The Global Financial Crisis
2009	ALTA, Perth WA.	Trips Traps For Copper Heap Leaching
2009	IRR Crushing & Grinding Conference, Brisbane QLD.	Trends With Selection & Sizing of Vibrating Screens - What is Available In The Marketplace



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2009	Mining The Mid West, Perth WA.	Iron Ore Characteristics-The Implications For Processing
2008	ACG Tailings Seminar, Perth WA.	Dealing With The Realities of Decreasing Water Availability For The Resources Sector
2008	IQPC Crushing & Grinding Conference, Perth WA.	Trends With Selection & Sizing of Cone Crushers - What is Available In The Marketplace
2008	Perth Mining Expo, Perth WA.	Critical Aspects of Metallurgical Testwork
2008	AusIMM METPLANT, Perth WA.	Trends with Titaniferous Magnetite Processing for Vanadium Extraction
2008	Australian Uranium Conference, Perth WA.	Uranium Mineralogy and the Specific Impact on the Process Flowsheet
2008	ALTA, Perth WA.	Implications of Mineralogy on Uranium Ore Process
2008	AMEC National Mining Congress, Perth WA.	Levels of Feasibility Study for the Exploration Market
2008	Mining In The Mid West, Perth WA.	Reviewing the Application of Beneficiation Techniques to Iron Ores
2007	Mining 2007, Brisbane Qld.	Metallurgical Testing & Flowsheet Development
2007	Australian Nickel Conference, Perth WA.	Comparative Leaching Technologies



Date	Conference	Title
2005	Conference of Metallurgists, Calgary Canada.	Frog's Leg Gold Project – A Non-traditional Approach to Development
2005	AusIMM Centenary of Flotation, Brisbane QLD.	Separation of Pyrite and Arsenopyrite in a Gold Sulphide Concentrate
2004	AusIMM METPLANT, Perth WA.	The Mina Sertão Gold Project – From Drill Core to Production
2002	Symposium – Treatment of Complex Gold Ores, Leura NSW.	Paulsens Gold Project – What Panel Beating & Metallurgy Have In Common
2001	MINEX, Perth WA.	Transportable Plants In Mineral Processing



A world map with a light blue background and white outlines of continents. Numerous thin, glowing yellow lines radiate from the continent of Australia, extending across the globe to various other regions, symbolizing global connectivity.

# THANK YOU

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