



# A Boughey Pty Ltd

Technical Management and Consulting

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# OVERVIEW



A Boughey Pty Ltd is a multi-discipline consulting firm providing a range of technical and management services. We have a team of consultants who bring a diversity of backgrounds and experience in assisting our clients in solving their problems and executing their projects.

We endeavour to work in partnership with our clients, and to deliver on the promises we make of quality service, optimal communication and teamwork.

A Boughey Pty Ltd was established in 1999. Our consultants have more than 40 years experience in engineering management, equipment design, mechanical and structural design, software design, contract administration, business administration, professional development training, and managing and operating maintenance workshops.

Our business focus is on providing innovative engineering services and technical management.

We provide services in:

- ENGINEERING
- PROJECT MANAGEMENT

**OUR TEAM IS COMMITTED TO WORKING CLOSELY WITH YOUR BUSINESS TO ENSURE THAT YOUR NEEDS ARE CLEARLY UNDERSTOOD AND SOLUTIONS ARE SYSTEMATICALLY IDENTIFIED AND CAREFULLY PLANNED AND IMPLEMENTED**

# ENGINEERING

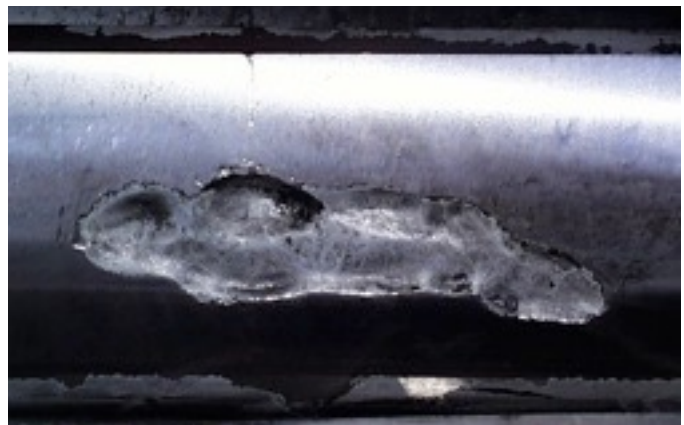


## ENGINEERING CONSULTING

ABPL offers a range of engineering services that will assist you in providing solutions to your technical problems. Our services range from engineering design and preparation of technical documentation through to failure analysis and engineering management.

APBL provides services in:

- Management
- Document control
- Scheduling
- Failure analysis and remedial design
- Assessing equipment failure - cause and effect
- Auditing
- Specification writing - engineering equipment
- Design - equipment components
- Facilitation and design study tools - HAZOP (Hazard Operability Study) and FMEA (Failure Modes and Effects Analysis)
- Inspection and expediting
- Site supervision





# PROJECT MANAGEMENT



A Boughey Pty Ltd specialise in managing corporate projects such as management systems implementation, process and system improvement programs and technology infrastructure [utilising a customised project management toolkit].

Our project management team provide the following range of services:

- Systems implementation
- Document and correspondence management systems
- Contract administration
- Equipment supply
- Refurbishment
- Project audits that ensure correct controls are in place for such areas as procedures, budgets and scheduling.
- Cost estimating, cost control and scheduling
- Document preparation for contracts, tenders and scoping.
- Site supervision

**OUR TALENTED PROJECT  
MANAGEMENT TEAM WILL TAKE A  
PROJECT FROM AN INITIAL IDEA  
THROUGH TO IMPLEMENTATION  
AND SUPPORT.**



# PROJECT HISTORY

## Engineering & Project Management



### Asset PCR

Underground Transporter Planetary Drive - Failure Analysis

### 3ME Technology

Transfer Case design

### Akdas Casting Industry & Trade Co. Ltd, Turkey

32' x 14' SAG mill engineering support for manufacture of mill heads and trunnions

### Alcoa World Alumina Australia

Mill Replacement Study - Inspection and study of options

### Battery Limits Pty Ltd

Capital Cost Estimate for Molymines Molybdenum Project

### Carbine Tungsten Limited

Expansion Project - Project support

### Clyde and Co.

Expert Witness services for workshop equipment failure

### Compania Minera Dona Ines de Collahuasi SCM, Chile

Collahuasi Mine Component Failure Analysis - Ball mill repair support

Collahuasi Mine Mill Support - Inspection of damage to ball mills and related reporting

### Copperchem Limited

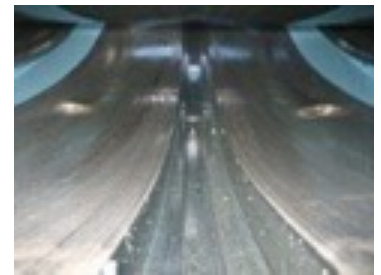
Great Australia Operations - Preparation of schematics and specifications for the design and construction of grinding mill trunnion lubrication system

### Cullen Mining Services

Didipio Gold Copper Project, Philippines - Project Engineering and provision of training on mill trunnion bearing lubrication systems

Prominent Hill Pre-feasibility Quantity Take-off - Preliminary arrangements and engineering to enable preparation of a capital cost estimate

Mupane Gold Project Construction Review  
 Rapu Rapu Polymetallic Project  
 Fosterville Sulphide Project - Pre-feasibility capital cost estimate and project support, mill foundation cracking inspection and general mill consulting  
 Austindo Project, Indonesia -Used mill inspection and condition report  
 Old Hickory Optimisation Project - Engineering services for Iluka Resources Ltd, USA  
 Georgia Minerals Sand Project - Project engineering services  
 Henty Gold Mine - Gold mine review and paste fill plant study  
 Florida Georgia Development Project - Project engineering services  
 Mt Todd Capital Estimate - Cost estimate  
 Golden Grove Project - Cost studies  
 Copper Hill - Cost studies  
 Barraba Diatomaceous Earth Plant - Upgrade study  
 Cibaliung Gold Project - Construction review



#### DCL

M6 Tunnel Project - C2 Bridge Crane failure investigation  
 Bearing rating analysis for mineral sizer  
 Gearbox component design and refurbishment  
 Gearbox reviews, studies, and technical support

#### Effect Mechanical Maintenance Pty Ltd

Cadia Gearbox - Failure consultation

#### FFF Australia

Rod Mill Rotating Assembly - design and documentation for manufacture

#### Gimas Heavy Machinery Manufacturing and Engineering Co.

Ball Mill Assembly - Machining advice for ball mill assembly

#### Golden Band Resources

Ball Mill Support - Mill torque determination

#### GRD Minproc

Lumwana Project - Technical support for mill tender evaluation

#### HV Operations Pty Ltd

HC1 Risk assessment design review

#### Incitec Pivot Limited

Coater Tyre - Technical support

#### Irah Shilling

Design and detailing of overdrive gearbox for Unimog AWD vehicle

Kimberley Metals

Mineral Hill Project, NSW - Inspection and condition report on existing ball mills to enable mills to be returned to service after being on care and maintenance

Klient Industries

Planetary gearbox design

LALIVE, Switzerland

Expert Witness services for gearless mill drive train

Maldon Resources Pty Ltd

SAG Mill audit

McArthur River Mining Pty Ltd, NT Australia

McArthur River Expansion Mill Support - Support services for ball mill installation

Metso Minerals Australia

Bell-Bay rotary breaker scoop design

Lihir, PNG Carbon Reactivation Kiln

Cadia Valley Operations, NSW - Pad bearing inspection

Northparkes Mines, NSW - Mill trunnion bearing inspections

Ok Tedi 32" SAG Mill Upgrade - Project engineering support for project execution

Holcim Lynwood Crushing and Screening Plant Building Design - Design and documentation services for the structural design of the Primary Crushing Station for the Holcim-Lynwood Quarry Project

Masbate SAG Mill Shell Repair Support, Philippines - Support for repair of damaged shell

Three Springs Conveyer Design - Design review of conveyer compliance with Australian Standards

Savage River AG Mill, Fabrication and Technical Support - Technical support for Savage River replacement mill shell assembly

Freeport (Indonesia) Ball Mill Gear Inspection - Inspection of damaged gear

Mt Isa Mines, QLD - Failure support and field analysis for hydrostatic trunnion bearing on ball mill

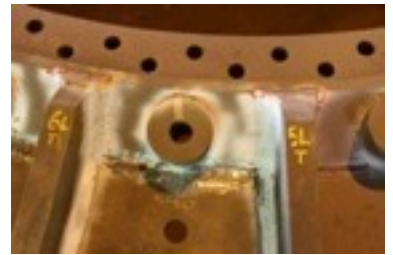
Batu Hijau, Indonesia - Provision of training on mill trunnion bearing lubrication systems

Savage River Shell Replacement - Support for manufacturing of replacement mill shell

Boddington, WA - Grinding mill technical support

Black Swan Project Mill Refurbishment - Inspection and reporting of condition of used SAG mill, preparation of refurbishment plans and supervision of refurbishment activities for the mill

Telfer Ball Mill Fabrication Supervision - Provision of workshop supervision for the resolution of ball mill shell fabrication issues





Milleng Pty Ltd

Fluid film analysis - Mill trunnion bearing

MMG Dugald River Pty Ltd

SAG mill bearing failure

Murrin Murrin Operations Pty Ltd

Ball mill repair procedure technical support

Newcrest Mining Limited (Newmont), VIC Australia

Cadia Valley Operations, NSW

SAG mill head liner bolt failure

Trunnion bearing advice and support

Discussion paper GMD vs Geared Drives in 17-18MW range

QA/QC for installation of girth gear

Pad bearing inspection and report

Telfer Gold Mine, WA

Critical spares review and grinding mill lubrication systems  
reliability audit and review

Feasibility review to increase size of trucks feeding primary  
crushers

Newmont Boddington Gold Mine

Structural bolting analysis of ball mill

Ball mill leaking bolting flange and bolt breakage solutions

Northern Star Resources Ltd - Kalgoorlie Consolidated Gold Mines P/L

SAG and ball mill review

Lubrication review of milling and crushing equipment

Northparkes Mines (Evolution Mining), NSW Australia

SAG mill gearbox failure review

SAG mill upgrade study review

Mill power increase study

Flotation Cell Audit

Failure review of secondary crusher

QA services for SAG mill gear installation

Northparkes ML03 Replacement Gear - Technical support for  
purchase of new gear and pinion

Crusher Failure - Root Cause Analysis

Analysis of SAG mill motor drive failures

Regrind Mill Refurbishment - Project management, inspection and  
technical services for the refurbishment and installation of  
used ball mill

Conveyer drive gearbox failure analysis

Oceanagold (Philippines), Inc.

Didipio Gold Copper Project - Project Coordination





Ok Tedi Mining Limited

- Ball mill repairs - technical support
- Ball mill feed & discharge trunnions - technical assistance for replacement
- Conveyer failure investigation
- Mill Speed Upgrade Review
- Regrind Mill - Technical support for trunnion repair

Paladin Resources (Africa)

- Kayelekera SAG Mill Equipment Audit and support
- Kayelekera Project Mill Refurbishment - Inspection and condition report, preparation of refurbishment work scope, oversight of loading for shipment to Africa from Philippines

Panoramic Resources Ltd

- Savannah Project, WA - SAG mill gearbox inspection and analysis

Philippine Gold Processing and Refining Corporation, Indonesia

- Mill inspection - trunnions bearing clearance checks and drive train alignment audit
- Masbate Ball Mill - Consultation on trunnion bearing issue
- Masbate SAG Mill Replacement Shell Contract Support - Procurement and manufacture support for replacement of SAG Mill shell

Philipp's Technical Consultants Corporation

- Mindoro Nickel Project DFS Support

Phu Bia Mining Limited, Laos

- Girth Gears Asset Management - Management review

PT. Amman Mineral Nusa Tenggara, Indonesia

- Batu Hijau Grinding Mill - Ongoing site support and SAG mill equipment audits

PT. Crushing and Mining Equipment, Indonesia

- Batu Hijau Grinding Mill - Site support and mill equipment audit

Regis Resources Limited

- Technical Support - Vent fan failure analysis, pinion shafts, failure analysis, mill audits

South 32 Cannington Pty Ltd

- AG mill review and assessment

Tanami Gold NL

- Tanami Gold Coyote Project, WA - Grinding mill equipment inspection

Tasmania Mines Limited, TAS Australia

- Mill Motor Replacement - Engineering and onsite technical support
- Mill Support - Mill drive analysis and mill refurbishment option study including support for gear and pinion procurement and manufacture

Tega McNally Minerals Ltd, India

Design and engineering of 6.1 m diameter by 12m Ball mill

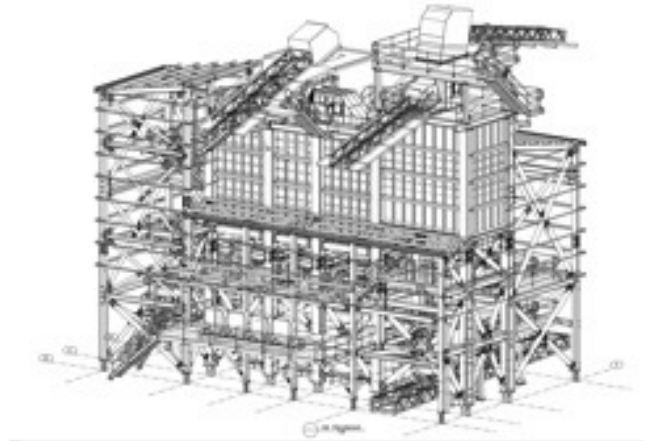
Yilmaz Process technology Ltd. Co., Turkey

Tower Mill designs -MSTM500DD, MSTM1000DD

Lime Slaker design and detailing

Vytas LLC, USA

Site inspections for Quellaveco ball mill.



# PROJECT HISTORY

## Hazard & Operability Studies (HAZOP)



HAZOP for Asphalt Batching Plant

Client: Roads & Traffic Authority, NSW, 2006

HAZOP of Burner System for Rotary Dryer

Client: Cement Australia, 2004

HAZOP for Asphalt Plant Port Kembla

Client: Boral Asphalt Ltd, 2004

HAZOP for a Mineral Sands Concentrator

Client: Iluka Resources' Florida Georgia  
Development Project

HAZOP for Limited Attendance Fluid Bed Boiler

Client: Energy Equipment Pty Ltd, 1993

HAZOP on limited attended boiler installations.





# PROJECT HISTORY

## Business Solutions



### Centennial Coal

Supply and installation of RIMSYS and associated database training for risk personnel

### Bulong Nickel Project on behalf of Barclays Bank

Risk Assessment

### GRD Minproc

Risk Assessment - Kingsgate Consolidated Ltd

Delta Gold Risk Project

Eastern Creek UR-3R Project - Commissioning risk assessment

### Hinchinbrook Public School

Creation of centralised and remote reporting databases for Hinchinbrook Public School K-6

Reporting and ongoing associated modifications

### Kanowna Belle Gold Mine

Risk Management training

### Kingsgate Consolidated

Supply and installation of RIMSYS and associated database training

Database development

### Kirrawee High School

Cost audit and estimation for Music Block construction

### Melbourne City Council

Business Continuity Program

### Newcrest Mining Limited

Whole-of-business risk management system implementation, including training programs

Development of Disaster Recovery Plan Framework

Risk assessment workshops

Development of Group Crisis Management Plan

Director's IT support

### Oxiana Ltd

Roads and Traffic Authority, NSW

Risk Assessment Report for RTA Bellambi Asphalt Plant

Ross Campbell & Associates

Leightons Holdings & Xstrata (Ravenswood) Crisis Management workshops & support

ARA Crisis Management Audit

P & O Business Continuity Planning

Preparation of Emergency Response Plans for Sun Metals Refinery

NRMA Crisis Management Plan

Fosters Risk Assessment

SAMAG (South Australian Magnesium) Project

Business Risk Assessment.



# PROJECT HISTORY

## Asset Management



Rio Tinto/Hail Creek Coal Project

Heavy Mobile Equipment contract support, 2008 - 2013

Energy Resources of Australia

Heavy Mobile Equipment contract support, 2010 - 2012

Clermont Coal Project

Heavy Mobile Equipment contract training and support, and Heavy Mobile Equipment agreements, 2008 - 2012

Warkworth Mining Limited

Heavy Mobile Equipment Support, 2011

Coal & Allied - Hunter Valley Operations

Heavy Mobile Equipment contract support, 2008 - 2012

Blair Athol Coal

Heavy Mobile Equipment contract support, 2008 - 2011

Rio Tinto/Hail Creek Coal Project

Heavy Mobile Equipment contract support, 2008 - 2012

Red Button Group Limited

Creation of maintenance plans for Lucas Drilling, 2009-2010

Rio Tinto Coal Australia Pty Ltd

Maintenance Audits, 2006 - 2012

Development of contingency plans for Critical Risk, 2004

Bengalla Mining Company Pty Ltd

Heavy Mobile Equipment contract support, 2008 - 2011.





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