

Capability Statement 2019

Micronised Mineral Solutions Pty Ltd
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Introduction

MICRONISED MINERALS (MMS) a minerals earth company focused on the supply of high-quality mineral products and whole of service in innovative ways. Established in Darwin in 2007 to service the mining, oil & gas, civil & agricultural sectors throughout Northern Australia, MMS are minerals specialists in the manufacture and supply of industrial and agricultural minerals.

Modern purpose-built facility located in East Arm with close access to the Darwin Port facility and Rail terminal. With multiple road train access, road tankers, ISO & purpose-built tipping containers we are well equipped to fulfil customer delivery requirements

Vision

Our vision is Environmental Transformation

Our passion for environmental transformation drives us to design the best products and implement solutions with innovative technology using earth minerals.

Mission Statement

Micronised Mineral Solutions Pty Ltd is a natural minerals company focused on offering high-quality mineral products and whole of service in innovative ways. We provide our customers with flexible lower cost options for dealing with environmental issues. We view ourselves as partners with our customers, our employees, our community and our environment. We aim to become an internationally recognised company for environmental transformation.

Core Values

MMS is committed to offer innovative and cost effective mineral treatment solutions to our customers and always treat them as our topmost priority. With our key focus on satisfying customer requirements and exceeding their expectations through quality products and services, we strive to create meaningful work for ourselves and add lasting value to the world environment. Our four guiding principles are:

INTEGRITY: Integrity is at the heart of everything we do. We are honest, ethical and upfront because trust is the foundation of our relationships with our customers, our communities, our stakeholders and each other.

RESPECT: We understand it is critical that we respect everyone at every level of our business. We champion diversity, embrace individuality and listen carefully to opinions.

PERFORMANCE EXCELLENCE: We endlessly work towards achieving a very high standard of performance and continuously strive to make the world environment better.

ACCOUNTABILITY: We accept responsibility of our actions as individuals, as team members, and as an organisation. We work together, support one another and never let our customers or co-workers down.

CORE COMPETENCIES & CAPABILITIES

1. pH Management & Control
2. Manufacture & Supply of Industrial Minerals
3. Blend & Fine Milling of Agriculture Minerals
4. Materials Handling, Storage & Delivery

COMPETANCY	PRODUCTS	SECTORS SERVED
pH Management & Control	<ul style="list-style-type: none"> • Micro Reactor • Enviro Catalyst 	<ul style="list-style-type: none"> • Mining
Manufacture & Supply of Industrial Minerals	<ul style="list-style-type: none"> • Quicklime • Hydrated Lime • Barite (Barium Sulphate) • Enviro Catalyst 	<ul style="list-style-type: none"> • Mining • Oil & Gas • Civil & Infrastructure
Blend & Fine Milling of Agriculture Minerals	<ul style="list-style-type: none"> • Calcium Carbonate • Gypsum and Lime • Dolomite 	<ul style="list-style-type: none"> • Agriculture
Materials Handling, Storage & Delivery	<ul style="list-style-type: none"> • Quicklime • Hydrated Lime • Enviro Catalyst • Calcium Carbonate • Gypsum • Dolomite 	<ul style="list-style-type: none"> • Mining • Oil & Gas • Civil & Infrastructure

pH Management & Control

Micronised Mineral Solutions was awarded Australian Patent **2013209309** for "*Method and Apparatus for Acidic Surface Water Treatment*" (Micro Reactor Technology) in 2018 and is continuing the patent development of its locally developed reagent "Enviro Catalyst". The innovative in-situ acid mine water treatment process is a highly effective and reasonable solution for decontamination of acid mine water containing high levels of dissolved metals stored on active and legacy mine sites. When compared to the current caustic soda treatment processes commonly used on mine sites, the improvement in water quality and subsequent reduction in toxicity after using the MMS Reagent has proven favourably in price and detoxification outcomes.

Using our Patent Technology and locally developed reagent, MMS successfully completed decontamination at Vista Gold Australia of the Mt Todd mine water pit of 10.3 billion litres of acidic water. The body of water has transformed from a level of high toxicity to aquatic life to one where 99.8% of metals have been removed. The local flora and fauna were recovered along with the native frog population.

Manufacture & Supply of Industrial Minerals

MMS provides a complete service vertically integrated to meet our client requirements. Our modern purpose-built facility is ideally located in East Arm, close to the Darwin Port and train terminals. With specialised manufacturing equipment including **Twin Vertical Roller Mills** providing annual capacity of >100,000 tonnes production infinitely managed by turbine classification for careful particle size management for exacting product sizes ranging from 5-250 micron.

MMS processes ensure the production of high-quality fine ground minerals with the added capacity to accurately blend specialty products to suit client requirements. MMS products servicing the Mining, Oil & Gas and Civil & Infrastructure Sectors :

- Quicklime
- Hydrated Lime
- Barite (drilling mud)
- Enviro Catalyst (mine water treatment)

Mining Sector

MMS is the only major supplier of Chememan Quicklime and Hydrated lime to numerous projects within Northern Australia, servicing a variety of mining applications:

- Heavy Rare Earth Mineral Processing
- Acid Tailings & Water Treatment for Gold and Uranium mines
- Domestic drinking and wastewater treatment
- Industrial binder applications.
- Acid Mine Water Treatment using specially designed in-house slaking plants and reagents.

Oil & Gas Sector

Key supplier of high-quality Drilling Mud to various oil & gas projects within Northern Australia. MMS mines and processes Barite, a high purity Barium Sulphate (BaSO_4) product. MMS sources Barite from its mineral lease south of Darwin and processes to API standards.

Civil & Infrastructure Sector

Supplier of high-quality industrial calcium carbonate for the treatment of acid sulphate soil/soil preconditioning for civil construction projects throughout Northern Territory.

Blend & Fine Milling of Agriculture Minerals

Key supplier of high-quality agricultural minerals to the tropical fruit & vegetable growers and broad acre farms in Northern Territory. MMS agriculture minerals are specially processed and formulated to maximise the Effective Neutralisation Value (ENV) creating a balancing agent for low pH soils. MMS Calci Flour is 5 times more available to plants than typical Aglime product.

- MMS Calci Flour (fine ground calcium carbonate)
- MMS Gyp Flour (high-quality calcium sulphate/gypsum)
- MMS Dolomite

Materials Handling, Storage & Delivery

The MMS facility is a purpose built facility strategically located close to the Darwin Port and Rail terminal. With a laydown area on a semi-sealed yard of > 10,000 Sqm and equipped to expand upon its current usage, servicing offshore oil and gas operations. Provider of vendor and logistical services to the oil & gas, mining and civil industrial industries.

Capacity to support the loading/unloading of 20'/40' containers up to 32mt's, ISOs and road tanker trailers up to 80mt payloads. 10 hectares of laydown area, 800m² of undercover storage well-appointed workshop, office and secured storage and yard facilities.

- 800 m² under cover area
- 10,000 m² storage area
- Offices and amenities
- Secure dedicated moisture controlled container storage for mineral product.
- Unloading of bulker bag / palletised product and stowing.
- Transport of export containers from Darwin Port, stuffing and returning to Port for export.
- Suppliers of pallets for long haul transport and containerised logistics.

Our materials handling equipment includes:

- 200 Tonne overhead silo storage
- 400 Tonne ISO and horizontal silo storage
- Warehousing and 20' container storage
- Bulk ore set down areas 1000Sqm
- Front End Loader
- Container and materials handling equipment
- Forklifts up to 32 tonne
- Bagging and Debagging equipment
- 20m x 50 tonne weighbridge

MANAGEMENT PROFILES

LEON TARRANT - A background in mechanical engineering and the driving force behind the innovative chemistry and equipment design created to meet clients' projects. He has 30 years extensive experience in the use of industrial minerals and has innovative capability to engineer and develop unique solutions.

Leon's strong understanding of Mine operations and associated processes enables him to provide apt products and solutions to this sector. His project management capabilities and direct experience with the laboratory research enables MMS to service all sectors with its product portfolio.

Leon is supported by a team of experienced business management and technical personnel with sound business finance, logistics, engineering, materials production and marketing experience.

GLENYS TARRANT - Business Administrator with 30 years' experience in business administration, human resources and finance. Is responsible for the financial performance and strategic direction of MMS in consultation with Leon Tarrant. Implemented the Integrated Management System, Human Resources and Environmental, Health & Safety Procedure Systems to industry standards. Extensive knowledge of the products and service requirements for the mining, oil & gas and civil sectors. Sound expertise in international import & export, logistics and documentation knowledge from regular container movements between Indonesia, Malaysia and India into Gove & Darwin.

ANDREW HALL - Process Engineer with 20 years' experience in mechanical and automated control maintenance of industrial machinery in the gas and oil sector. Responsible for the design, fabrication, testing and upgrading systems and processes in collaboration with Leon Tarrant. Maintains MMS's equipment to meet all service and safety requirements.

CREDENTIALS & ACCREDITATIONS

- Australian Patent 2013209309 Method & Apparatus for Acidic Surface Water Treatment
- Accelerating Commercialisation Grant in 2016 to implement a comprehensive water sampling and ecotoxicology assessment program to evaluate the effectiveness of the MMS in-situ acid mine water treatment process.
- Short Listed Australian Technologies Competition 2016 for Decontamination of acid mine water technology.
- Finalist in the 2016 NT Department of Business Industry Innovation Award for our pH management and control technology.

CURRENT & PREVIOUS PROJECTS**Client: KIRKLAND LAKE GOLD****Project:** Cosmo Howley Mine, NT**Period:** September 2018 - Ongoing**Description:** Supply of fine ground Quicklime for on-site water treatment plant.**Client: NORTHERN MINERALS****Project:** Brown's Range Project, WA**Period:** May 2018 - Ongoing**Description:** Supply of fine ground Quicklime for heavy rare earths mineral processing.**Client: HALLIBURTON****Project:** PowerWater Wastewater Treatment Plant NT**Period:** October 2018 - Ongoing**Description:** Supply of fine ground Quicklime for on-site waste water treatment.**Client: ERA RANGER MINE /RIO TINTO****Project:** Jabiru Mine Site, NT**Period:** 2017 - July 2019**Description:** Supply of lime and flocculants for acid mine water treatment**Client: AUSTRALIAN MUD COMPANY****Project:** Beach Energy Kununurra WA**Period:** May 2014 – February 2019**Description:** Manufacture and supply drilling grade barite and vendor services for onshore oil & gas exploration.**Client: MONADELPHOUS GROUP LTD****Project:** Inpex Site, NT**Period:** April 2014 – October 2015**Description:** Manufacture and supply of reagent for acid soil pre-conditioning of acidic backfill for gas pipeline trench.**Client: VISTA GOLD AUSTRALIA****Project:** Mt Todd Mine Pit, NT**Period:** November 2012 - March 2013**Description:** Whole of service treatment of 10.3 billion litres of acid mine drainage. Treatment completed within a 4-month time frame.**Client: LEIGHTONS CONTRACTORS****Project:** Inpex Site, NT**Period:** July 2013**Description:** Manufacture and supply of reagent for the treatment of Acid Sulphate soils for civil construction works

Client: JOHN HOLLAND & MCMAHON CONTRACTORS

Project: Inpex site, NT

Period: March 2013

Description: Manufacture and supply of calcium carbonate for the treatment of Acid Sulphate soils.

Client: PACIFIC ALUMINIUM / RIO TINTO

Project: Alumina Refinery, Nhulunbuy NT

Period: 2008 to 2012

Description: Provision of contingent containerised quicklime and in-house engineered container discharge equipment system and personnel for the Aluminium refinery at Nhulunbuy, Gove. Managed the supply and transport of over 100,000 tonne of containerised product from 2008 to 2012 into Gove Port until the Refinery Plant closure in 2012. MMS supplied production timelines to Gove Procurement to ensure product was ordered, manufactured, shipped and available when required.

Client: COMPASS RESOURCES

Project: Brown's Creek Copper, Nickel, Cobalt project, Batchelor NT

Period: May 2007 – February 2009

Description: Mine Site Based Owner Operators of calcium carbonate production facilities Construction of CaCo₃ milling plant. Manufacture and supply of neutralisation lime for base metal production.

Exclusive Northern Australian Agent for Chememan Australia

MMS has a legal & contractual relationship with Chememan Australia & Thailand as exclusive agent for the supply of high-quality lime products in Northern Australia.

Chememan is the largest producer of burnt limes in the Asia Pacific Region.

Chememan Australia is well regarded in the mining and industrial sectors in Western Australia for quality and service. Since the establishment of Chememan Australia in 2008 they have achieved levels of lime sales in excess of 30 Million AUD annually.

All Chememan products are manufactured to ISO 9001 Quality Assurance.

ENVIRONMENTAL MANAGEMENT SYSTEM

MMS is committed to conducting all its operations in an environmentally responsible manner. The Company plans and manages its activities to minimise disturbance to the environments in which it operates.

The company strives to fulfil these objectives by observing all environmental laws and regulations and use of all available resources to:-

- Identify any possible areas of environmental conflict;
- Integrate environmental considerations into our work planning and operations;
- Assess potential impact of our operations on the environment in which we work;
- Rehabilitate the environment affected by our operations.

HEALTH & SAFETY MANAGEMENT

MMS is committed to the philosophy that the health and safety of its employees is of prime importance to the success of its operations. The Company is committed to ensuring its operations are conducted in a safe and productive manner that will not incur injury to personnel or damage to the environment. MMS aims to achieve:

- Zero workplace injuries and illness
- Zero plant and equipment damage
- Zero environment incidents

QUALITY CONTROL MANAGEMENT

The Directors, Management and Staff are responsible for Quality Control through the Quality Management System seeking improvement by constant review. The Company is committed to achieving customer satisfaction using quality procedures which are operated to meet or exceed the requirements of ISO 9001.

All personnel within the company are responsible for the quality of their work. The company provides training and has established systems to assist all personnel to achieve the standards required.

The company continues to develop its expertise in the areas of mine environment management specifically dealing with acid drainage and pH management and its aim is to achieve a high standard of service to its customers.