# NAGROM

## Capability Statement 2024



# **Company Overview**

Nagrom, a privately owned Western Australian company, has been providing metallurgical services to the mining industry for over 45 years.

Our Kelmscott facility with over 100 processing units and a staff of over 100 can provide thorough investigation of your process flowsheet. From bench-scale to +100t pilots, from high volume yields of iron ore to high concentration processes of tin, tungsten, tantalum and REO ores, Nagrom will have a solution for your project.

At Nagrom, we take pride in our ability to develop tailored metallurgical and exploration programs that skillfully navigate the intricacies and budget constraints of any project. We prioritize generating valuable insights and maximizing the outcome and information for projects of every size.

# Key Personnel Experience

The experience and expertise of Nagrom's staff has led to long-standing customer relationships and a reputation in the industry as one of the leaders in their field.



#### **Rick Murphy**

Chief Executive Officer

50+ Years Assaying, Minerals and Metallurgy



#### Rain Lewis

BSc (Extractive Metallurgy) General Manager/ Metallurgical Supervisor

15+ Years Metallurgy and Processing



#### Adam Holmes

BEng (Chemical and Process Engineering) *Metallurgist/Process Engineer* 

15+ Years Technical, Operational and Design in Mineral Processing



#### Dr Slobodanka Vukcevic

BSc(Metallurgy) MSc(Eng) Ljubljana, PhD Belgrade *Senior Metallurgist* 

30+ Years Hydromet, Pyromet, Leaching and Flotation



#### Lisa Allen

BSc (Environmental Science), Grad Dip (Extractive Metallurgy) Metallurgical Coordinator and Environmental Scientist

13+ Years' experience at Nagrom in Mineral Processing Testwork and Pilot Plant Commissioning



#### Adam Pound

BSc (Chemistry) *Laboratory Manager* 

18+ Years experience in Analytical Testing



#### **Anthony Price**

BEng (Chemical Engineering, Hons) *Metallurgist/Process Engineer* 

11+ Years' experience in Process Optimisation and Project Management



### Russell Lewis

Operations Manage

12+ Year's experience in Operations and Technical Supervision in Mineral Processing Testwork Programs



#### Ryan Wilson

MPE (Chemical Engineering), BSc (Engineering and Synthetic Chemistry) *Process Engineer* 

8+ Years experience in Metallurgy, Hydrometallurgy and Processing

# Capability Statement

Building our range of equipment since 1978, we own, we operate, we know the equipment and its capabilities. Our team builds partnerships with the world's leading manufacturers so that we can offer diverse processing solutions from the proven to the cutting edge.





#### Metallurgical Testing and Mineral Beneficiation

- Dense Medium Separators (Pilot & Lab Scale)
- Gravity Separators (Spirals, Tables, Jigs)
- Classifiers (Pilot & Lab Scale)
- Hydrocyclones (Pilot & Lab Scale)
- Flotation (Pilot, Bench Scale, Column)
- Comminution Testing
- Crushers (Jaw, Rolls & Cone)
- HPGR and Mills (Lab and Pilot Scale)
- Magnetic Separators (Dry/Wet Drum, WHGMS, Lab and Pilot Scale)
- Electrostatic Separators
- Solvent Extraction and Ion Exchange
- Leaching (Atmospheric & High Pressure)
- Pyrometallurgical Units
- High Purity Hydrometallurgy
- Sample Dividers (Bench and Large Scale)



#### Analytical

- Panalytical Axios Wavelength Dispersive XRF
- Perkin Elmer ICP-OES and ICP-MS
- Thermo Scientific ICAP 6000 ICP-OES
- Leco TGA 701's
- Malvern Mastersizer 3000 Lasersizer
- Fire Assay
- Carbon Sulphur Analyser
- Ring Mills
- Ball Mills



#### Flotation

- Pilot Flotation Cells
  - Joy-Denver Pilot Flotation Cells
  - OK Type U style Pilot Flotation Cells
  - Agitair Style (20L and 40L)
- Benchtop Flotation Cells
  - Essa
  - Denver
  - Agitair
- ERIEZ HydroFloat Lab unit
- ERIEZ Column Flotation Unit
- FLSmidth RFC100



#### Magnetic Separations -Production and Testwork

- Rare Earth Drum Magnets
- Various Dry Drums Magnets
- Rare Earth Belt Magnets
- Rapid Disc Magnets

   single and triple discs
- Wet Drum Separations
- Various Wet Drums Magnets
- ERIEZ Davis Tube
- Cross-belt Magnet
- Carpco Lab Magnet
- Gaustec Wet High Intensity Magnetic Separator
- SLon500
- GZRINM145 and GZRINM800
- Longi500
- DLS50





## **Gravity and Classification**

- Air Tables 1.5 to 2.5m Decks
- Wilfley / Holman Wet Tables
- Gemini Table
- Spirals (Various Profiles)
- Falcon Separator
- Knelson Concentrator
- Kelsey Jig
- Dense Media Cyclone Separation
  - DMS100
  - DMS250
  - Dedicated Diamond Plant
- Flat Bottom Classifier
- Desliming Cyclones
- FLSMidth Reflux Classifiers (RC300, RC100, Batch RC)
- Allmineral Allflux Classifier
- Russell Jig
- Allmineral Stratification Jig
- Batch and Continuous Wet Jig
- Batch and Continuous Air Jig
- Specific Gravity Determinations Via Gas Pycnometer and Wet Pycnometer
- Hydrostatic Weighing



#### Hydrometallurgy

- Leaching/Extraction Processes
- Diagnostic Atmospheric
   Pressure Leaching
- Pilot and Customised Process Programs and Equipment
- Solvent Extraction Processes
- Diagnostic and Benchscale
- Ion Exchange Processes
- Precipitation and Crystallisation Processes





### Custom Crushing/ Grinding and Preparation

- Almonte Auto Core Cutting
- Scrubber Trommels 1 metre, 2 metre & 5 metre
- Hydrocyclone Desliming Circuits (1" up to 10")
- Mozley Ultrafine Cyclone (0.5")
- Jaw Crushers
- Rolls Crushers
- WesCone 14"Cone Crusher
- Rod Mill Grinding (wet & dry circuit)
- Continuous Ball/Rod Mill
- Bench Scale Ball & Rod Mills
- Thyssenkrupp High Pressure Grinding Rolls (HPGR)
  - Pilotwall
  - Labwall



#### **Custom Screening**

- Single & Twin Deck Vibratory Screens (1-6tph)
- Gyratory Kason-Type Screens
- Orbital Bed Rotex Screens
- Large Scale Custom Piloting
- Shenck Screens
- Rotap
- 200mm Sieves and Shakers
- 450mm Sieves and Shakers
- Derrick Screen



### **Custom Drying**

- Controlled Drying Rooms
   1kg to 2 tonne
- Controlled Rotary Drying Kilns (2tph)
- Quarantine ovens for Sterilization (AQIS)



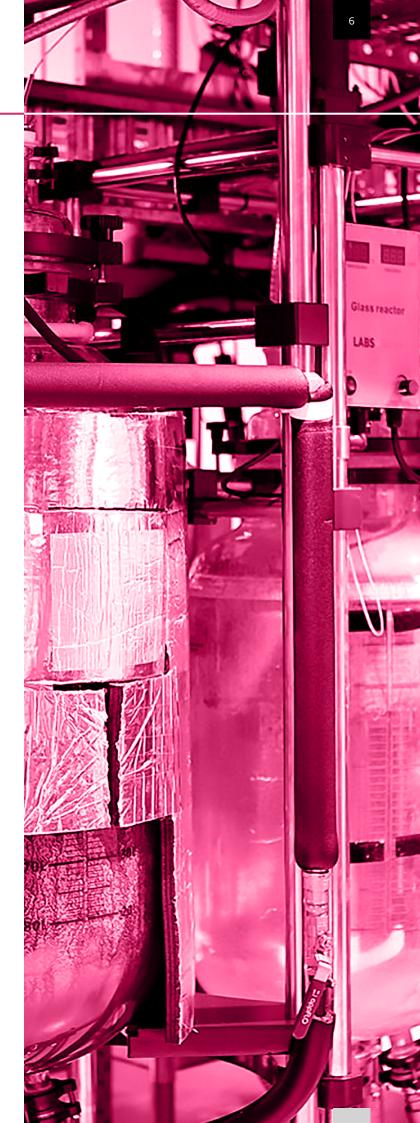
### **Electrostatic Separation**

- Dual Drum High Tension Separation
- Electrostatic Plate Separator
- Carrara and Readings High Tension Roll Separato



#### Gold Extraction - Testwork

- Cyanide Leach Programs
- Bottle Rolls & Column Leach
   Pilot Runs static & agitated
- Knelson and Falcon Concentrators
- Leachwell<sup>™</sup>



# Metallurgical Testwork - Current and Past Activity

- Mineral Resources Limited
- Fortescue Metals Group Ltd
- Galileo Mining
- Iluka Resources Limited
- Rio Tinto Exploration
- Hastings Technology Metals Ltd
- AVZ Minerals
- Liontown Resources
- Saturn Metals Limited
- Northern Minerals Ltd
- Peak Resources Ltd
- TNG Ltd
- Savannah Resources PLC
- Consolidated Minerals Ltd
- Atlantic Lithium Limited
- Pensana Metals Ltd
- Calidus Resources Limited
- Margosa Graphite Limited
- Covalent Lithium Pty Ltd
- Core Lithium Ltd
- Walkabout Resources Ltd
- King River Copper Ltd
- BHP Billiton Limited
- Kasbah Resources Limited

- Latin Resources
- Prospect Resources Limited
- Metals Tech Ltd
- Deep Yellow Limited
- Mkango Resources Ltd
- Birimian Limited
- Multicom Resources
- Speewah Mining Pty Ltd
- Pilbara Minerals Limited
- Novo Resources
- Artemis Resources Limited
- Bryah Resources Ltd
- Brockman Mining Australia
- Tungsten Mining NL
- Hill End Gold Ltd
- Arafura Resources Ltd
- Galaxy Lithium Australia Ltd
- Neometals Ltd
- Metals Australia Ltd
- Greenpower Energy Limited
- Hexagon Resources Ltd
- New Energy Minerals (Mustang)
- Saracen Metals Pty Ltd
- Golden Rim Resources LTD

- Lithium Australia
- Northern Star Resources Ltd
- Eastern Goldfields Limited
- Global Advanced Metals
- First Graphite Limited
- Flinders Mines Ltd
- European Metals Holdings Ltd
- Spitfire Minerals Limited
- U308 Corp.
- Echo Resources Ltd
- Aurora Minerals Limited
- Tyranna Resources Limited
- Kin Mining NL
- AngloGold Ashanti Australia
- Auroch Minerals NL
- Oceanagold Ltd
- Namibia Rare Earths Inc
- Delta Lithium Limited
- Liatam Mining
- Global Lithium Resources
- Talison Mining Pty Ltd
- Albemarle
- Lynas Rare Earths Ltd



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