Tailings Management
Mine Closure
& Rehabilitation

AGILITUS

Capability Statement

Shaping
Tomorrow
Together

agilitus.com

Acknowledgement of Country

Agilitus acknowledges Aboriginal and Torres Strait Islander peoples as the first peoples of Australia and the Traditional Owners and Custodians of lands and waterways on which we work and live.

Our operations are conducted on the traditional lands of the Whadjuk people of the Noongar nation in Perth, the Bindjareb people in Mandurah, the Larrakia people in Darwin, the Kaurna people in Adelaide, the Gurambilburra Wulgurukaba, Bindal, Nywaigi, and Gugu Badhun peoples in Townsville, the Turrbul and Jagera peoples in Brisbane, the Awabakal people in Newcastle, the Gadigal people of the Eora nation in Sydney, and the Wurundjeri and Boon Wurrung peoples of the Kulin nation in Melbourne.

We honour the wisdom of, and pay respect to, Elders past and present, and we acknowledge the cultural authority of all Aboriginal and Torres Strait Islander peoples across Australia.

We also acknowledge the vital contribution made by our Aboriginal and Torres Strait Islander employees and we thank those who have guided our approach and generously shared their insights.

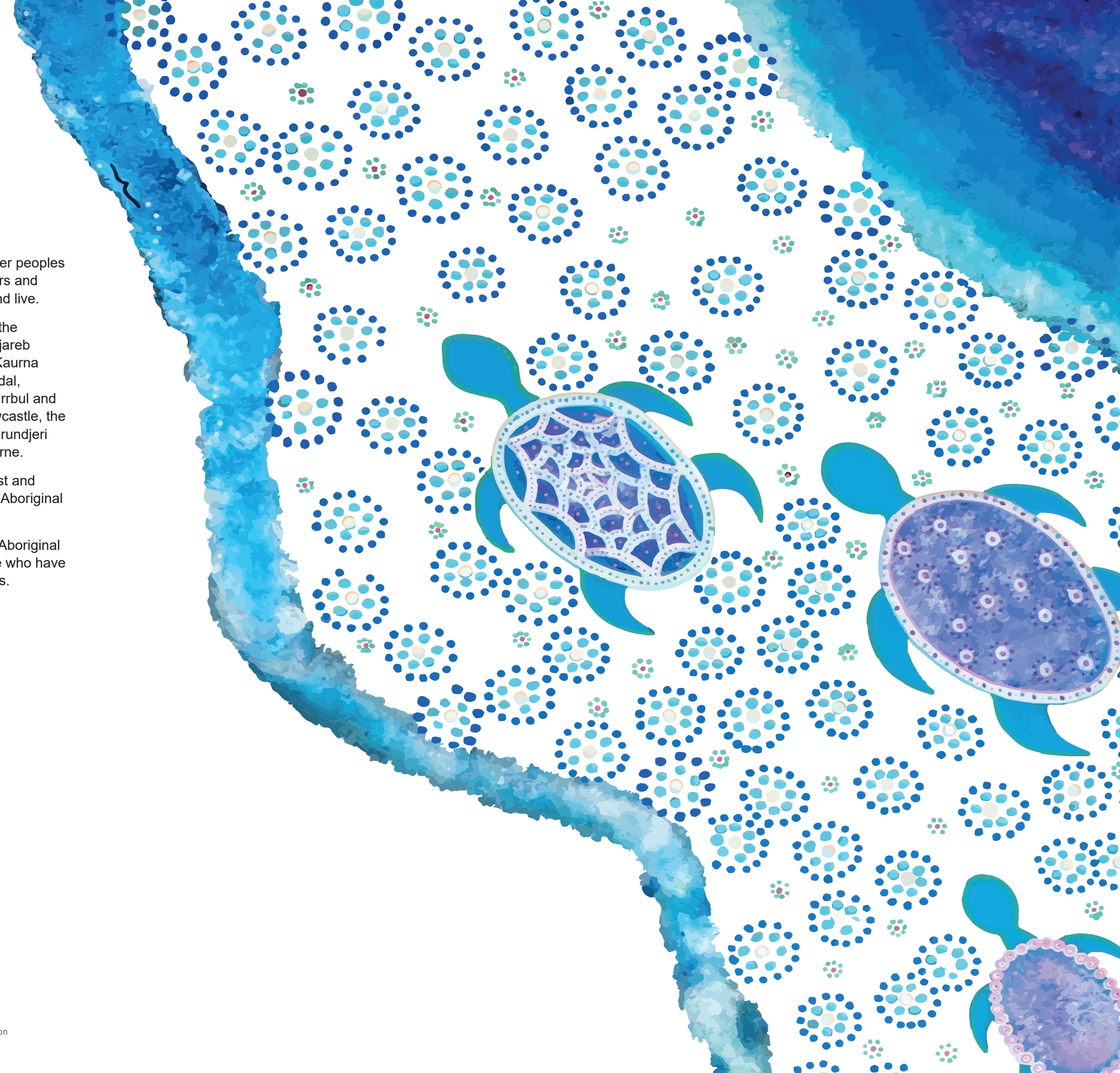
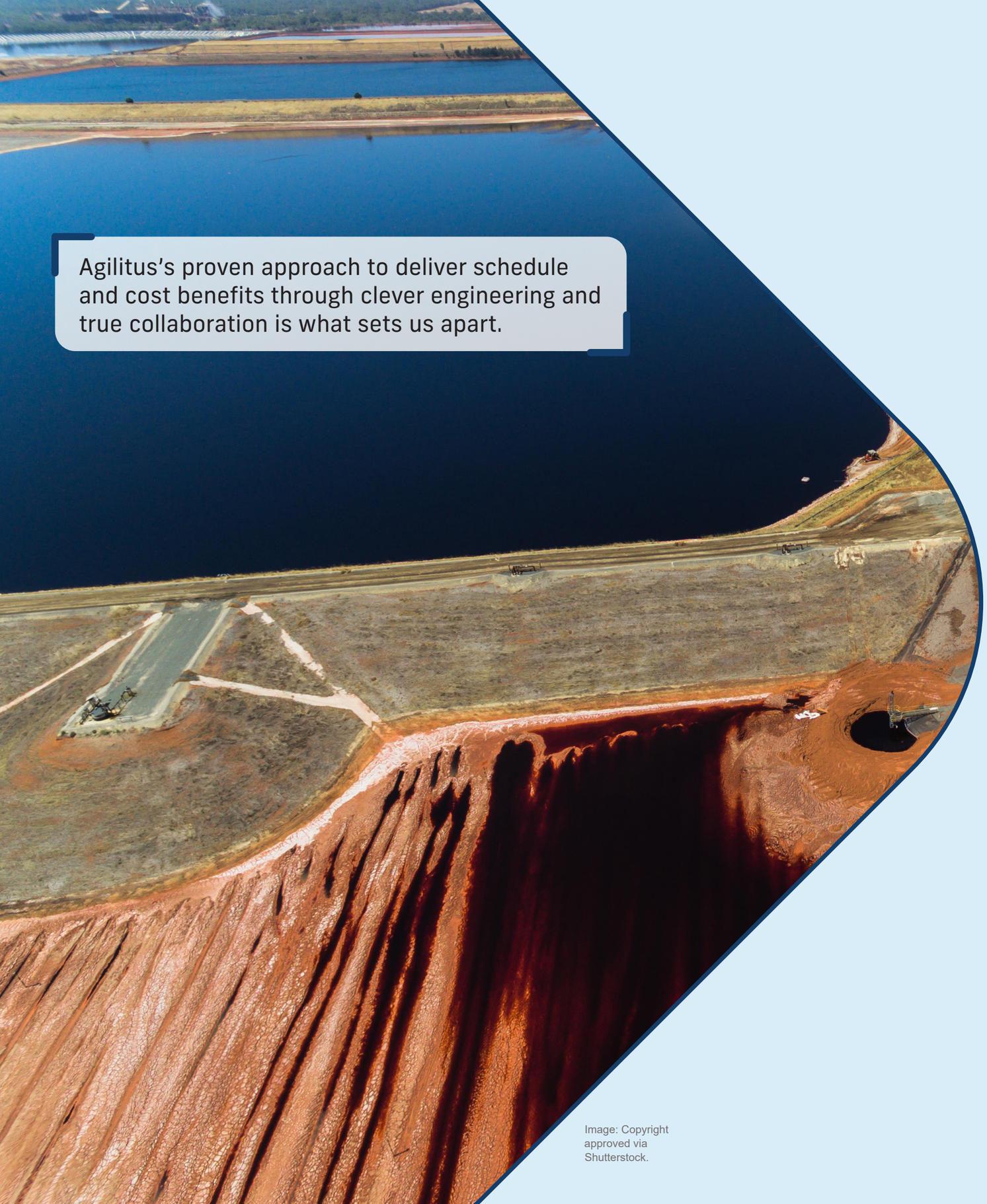


Image: Aboriginal artwork created by Jayda Sebire (Indigenous Artist and former Agilitus People and Culture Assistant).



Agilitus’s proven approach to deliver schedule and cost benefits through clever engineering and true collaboration is what sets us apart.

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Optimising Tailings Storage Facilities and Managing Mine Closures and Rehabilitation

Agilitus is a multidisciplinary engineering, design, project delivery and advisory consultancy, providing technical solutions for clients in the Resources, Energy and Industrial sectors.

With offices on the East and West coasts of Australia, we are majority owned by our employees and committed to helping clients decarbonise in a net zero economy.

Our fit-for-purpose engineering solutions enable mining and raw material proponents, energy and water utilities, and port authorities to optimise the performance their assets, minimise operational disruption, improve safety and mitigate risks.

Agilitus’s proven approach to deliver schedule and cost benefits through clever engineering and true collaboration is what sets us apart.

Our people pride themselves on providing smart and sustainable solutions to complex engineering problems; and importantly, on being great people to work with.

Technical Excellence

Our people are passionate about leveraging their technical ingenuity to solve complex problems.

Technical excellence is the bedrock of our business. It drives our people and propels the outcomes that we provide for clients, communities, asset owners and operators, and financiers.

Our dedicated professionals and subject matter experts focus on understanding our clients' business objectives, their desired project outcomes, as well as the latest industry research for the sectors in which we operate.

A Premium Client Experience

The success of our project work depends on leveraging the best expertise of our people. That's why we allocate the most qualified professionals to help realise our clients' development vision and bring their projects to life.

Our work is underpinned by strong engineering design principles, industry-leading technology and pragmatic advice to deliver exceptional outcomes, every time.

This approach provides the following benefits:

- Ease of understanding of regulatory frameworks
- Efficient navigation through the development approvals process
- Protection and preservation of our cultural heritage, the environment and waterways
- Healthy, transparent and trusted relationships are established with stakeholder groups
- Respectful liaison with Traditional Owners is undertaken
- Fair and equitable outcomes are achieved for First Nations' communities
- Project knowledge is retained, including lessons learned
- Innovation is embraced and deployed.

Technical Leadership Team

The quality and excellence of our world and ability to deliver the best technical and cost-effective solutions for our clients is guided by our Technical Leadership Team.

Led by the most senior members of our business, this team facilitates learning and knowledge transfer, professional collaboration and mentorship to drive continuous excellence in our technical capabilities. It also encourages our people to perform to high technical standards and rewards staff for incorporating innovation into projects.

Our dedicated professionals and subject matter experts focus on understanding our clients' business objectives, their desired project outcomes, as well as the latest industry research for the sectors in which we operate.

Image: Members of our Geotechnical team on-site at Port Hedland, WA.

Safety is at the Heart of our Business

Our diverse and culturally aware teams embrace safe work practices that are environmentally sound.

Safety is integral to everything we do at Agilitus. We care about our people, clients, and the communities in which we operate, and strive for zero harm in everything we do.

Health, safety and quality are embedded in our work practices, while heritage and sustainability are considered throughout the entire project life cycle.

We recognise the importance of continuously reviewing safety in design issues at all stages of a project, from investigation, design, construction, operation (including maintenance), closure and rehabilitation.

Exceeding regulatory obligations, we leverage a formalised Health, Safety, Environment and Quality Management framework that allows us to analyse and implement practical measures to mitigate risks.

Leadership

- Understanding of client needs
- Technical Leadership Team governance
- Strong Chartered presence
- Adherence to Technical Standards & Regulatory Instruments
- Committed to Technical Excellence
- Striving for low-carbon impacts

Systems

- ISO Accredited Quality Management System (QMS)
- Design Assurance
- Engineering Verification Procedures
- Safety in Design
- Net Zero in Design
- Risk Mitigation & Management
- Project Governance (Action Tracking, Monitoring, Performance & Auditing)
- Continuous Improvement (Lessons Learnt)

Characteristics

- Client Centric
- Risk Adverse
- Reliable
- Accountable
- Innovative
- Simplification
- Community & Culture

Exceeding regulatory obligations, we leverage a formalised Health, Safety, Environment and Quality Management framework that allows us to analyse and implement practical measures to mitigate risks.

Image: Matt Green, Engineering Geologist at Cape Preston, WA.

Respecting, Protecting and Preserving our Cultural Heritage

Image: Indigenous peoples' hands. Copyright approved via Shutterstock.

Diversity across our workforce and our supply chain is vital.

Our clients trust in our ability to enhance their social license to operate, including through the provision of mutually rewarding cultural heritage consultation and management, healthy Indigenous partnerships, and ethical procurement from Aboriginal-owned and operated businesses.

Working with Traditional Owners, First Nations peoples, Indigenous Prescribed Body Corporates and Aboriginal Corporations, is seeded in early engagement as it enables our team to deliver benefits for today (across the life cycle of proponents' projects) and for future generations.

Early engagement underpins our approach to cultural heritage management as it enables us to understand the needs and desires of all stakeholder groups, as well as any existing Indigenous Land Use Agreements (ILUAs) which have been registered with the National Native Title Tribunal (NNTT).

We partner with highly experienced local archaeologists and ethnographic specialists to provide clients with access to an abundance of heritage site data, and to collectively undertake walk-throughs of proposed project sites.

From the Kimberley in the North to Esperance in the South of WA, across central Australia and along the Eastern seaboard – we engage with Traditional Owners and Custodians, Prescribed Body Corporates (PBCs), Aboriginal development corporations and First Nations communities to preserve their cultural heritage and when helping proponents and/or government agencies to deliver projects.

Cultural Heritage Management Capabilities

- Stakeholder consultation and engagement to help Traditional Custodians of the land and Native Title Claimants to establish IULAs, registration to the NNTT and compensation frameworks (among others).
- Advice for proponents regarding the application of legislation including the Native Title Act 1993, Heritage Act 1972 (Aboriginal Cultural Heritage Bill 2021) and Repeal Bill 2023.
- Developing scopes for archaeological and ethnographic surveys.
- Indigenous business contracting (including teaming with Aboriginal-owned and Supply Nation-certified businesses to develop First Nations regional workforces).
- Capacity building (including coaching, mentoring and career pathway development, etc. for First Nations peoples).
- Reconciliation Action Plans.

First Nations' Partnerships

We have a range of actions in place to increase Aboriginal and Torres Strait Islander employment and engagement in our business, to help First Nations communities become self-sustaining (current participation is approximately 1.5 per cent of our workforce and we are striving to increase that to three per cent by December 2025).

We proudly support Aboriginal and Torres Strait Islander owned businesses and have established a majority-owned Aboriginal company, TICS (WA) Pty Ltd (TICS). TICS is a NATA-accredited laboratory to ISO 17025, providing nondestructive testing (NDT) services.

Similarly, we have strategic partnering arrangements with several Aboriginal-owned businesses, including Karlayura Contracting, which provides design and construction support for clients.

We have also established a similar partnering agreement with i24s, an Aboriginal-owned and operated workforce company, providing security, civil works and commercial cleaning services for mine sites in remote locations across Australia, as well as for commercial premises in capital cities (their clients include BHP, Horizon Power and Cundaline Resources, among others).

Most recently, we also established a partnership with Pirrpala, a 100 per cent Aboriginal-owned and operated small scale project delivery provider.

Our partnerships also span the globe, specifically in China, for the procurement of equipment and professional services, including on Country inspections of fabrication, testing, compliance and design reviews.

Reconciliation

Review our Innovate Reconciliation Action Plan, Aboriginal and Torres Strait Islander Engagement Strategy, Human Rights Statement and Anti-Discrimination Policy.

Tailings Storage Facilities (TSFs)

Offering an integrated approach to managing tailings and mine waste for minerals across the full life cycle of TSFs including meeting all standards - GITSM, TSM and others.

Our experienced ground engineering specialists collaborate with our clients to create holistic solutions at any stage of the life cycle of TSFs. This is achieved by developing a thorough understanding of the specific risks and hazards of your site.

Our expertise with tailings includes hydraulically-placed slurry, thickened paste and filtered dry stack operations. Our designs consider the overall site-specific constraints and opportunities for optimal disposal, such as upstream, downstream, centerline, and integrated waste landforms or in-pit disposal.

Agilitus provides multidisciplinary services integrating geotechnical, environmental, civil, hydrogeological, process, pumping and piping, electrical and structural engineering as well as ESG advisory for the successful delivery and management of your TSFs.

We take this one step further, providing education to operate your TSFs and advice for compliance with key standards - the Global Industry Standard on Tailings Management (GISTM) and the Towards Sustainable Mining (TSM) framework adopted by Mining Council of Australia members.

We partner with specialist organisations to integrate the very best advice, approaches and frameworks into our solutions.

Pumping & Piping Engineering

Specialising in mineral and chemical process pumping and piping engineering.

Agilitus offers a wide range of expertise in both brownfield and greenfield projects including detailed engineering design, assessment of existing pump and piping assets, construction support and process design.

Our experience spans the full suite of water and slurry transfer projects including marine works, bore fields, raw water, wastewater and process water handling.

Capabilities

- Slurry Pumping and Piping Systems
- Water Pumping and Piping Systems
- Computational Fluid Dynamics (CFD) using ANSYS
- Settling Velocity Calculation
- Network Analysis using Fluid Flow Software
- Site Troubleshooting
- Slurry Storage Tank Design
- Oxygen Injection Recirculation Circuits
- Thickening and Filtration Circuits
- Multistage Pumping Systems - Series and Parallel
- Chemical Storage and Dosing Systems
- Fire Water Systems
- Process Plant and Infrastructure
- Air, Water and Wastewater Services
- Gravity Flows and Launder Designs
- Tails Pumping System

Mine Closure & Rehabilitation

Providing an integrated approach to managing mine closure and rehabilitation across the full life cycle of mining operations to leave a positive legacy.

Alongside managing TSFs, we help our clients with closure plans which extend past the operational stage of when mining ceases and decommissioning is complete. This includes defining post-mining management such as rehabilitation and relinquishment to support the communities where you operate including First Nations.

Agilitus provides multidisciplinary services integrating all engineering and ESG capabilities for the entire mine closure process – from early planning to progressive rehabilitation during operation and culminates with final decommissioning, rehabilitation and relinquishment.

Considering the mining industry's ambitions to achieve net zero emissions by 2050, our experienced professionals work closely with our clients, collaborating to plan and action land and water stewardship as well as rehabilitation.

By leveraging cutting-edge technology, approaches and frameworks, we apply circular economy principles to closure and rehabilitation – to help our clients maintain their social licence to operate, reduce risks and deliver on their ESG goals.

Capabilities

- Landform Design
- Closure Support
- Cost Estimation & Provisioning
- Risk Assessments & Gap Analysis
- Water Quality Assessment & Management
- Stakeholder Engagement Strategies including Cultural Heritage Management
- Groundwater and Hydrogeology
- Mine Waste Characterisation
- Soil Assessments
- Geospatial Modelling, GIS, UAVs
- Integration of Closure & Rehabilitation Plans into LoM Plans
- Rehabilitation Advice and Supervision

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Agilitus Case Studies

Our team's experience spans decades of successfully delivering cost-effective, low residual risk TSFs, as well as managing mine closures and rehabilitation across Australia and Africa.

You're in Good Company

We work alongside many notable companies across Australia.

In the Tailings Management sector some of our clients include:

Alcoa

MINERAL RESOURCES

HANCOCK PROSPECTING

Image: Copyright approved via Shutterstock.

Image: Mulga Downs, WA.

Mulga Downs TSF

Client: HanRoy

HanRoy sought our advice for site selection with a number of critical siting constraints including Tradtional Owner sites of significance, environmental wetland receptors and mine planning scenarios.

Dam break studies were undertaken to ensure residue was not likely to reach and impact environmentally significant wetlands.

Outcomes

This project involved the assessment and selection of a preferred site and disposal option after consideration of operational, environmental and heritage constraints.

Our team designed the main embankments with consideration for the use of mining equipment only with limited or no access to heavy civil construction equipment using dirty waste rock material for the main embankment.

Lakeway Mine Closure Project

Client: Piper Preston Pty Ltd

Piper Preston has sought our advice to align their closure prioritising costs with their mine closure plan obligations.

Outcomes

Agilitus conducted a review of the PP's Closure Cost Estimate (CCE) in line with the Mine Closure Plan (MCP) for the Lakeway site including all plant, equipment, decommissioned mine pit, underground services, borefield, waste rock dumps, roads and salt lake areas.

The review identified a number of risks and opportunities including:

- Rehabilitation topsoil deficits
- Native title clarifications and approaches to minimise the risk of overruns due to misalignment of expectations with Traditional Owners
- Gaps in demolition and disposal strategies
- Waste disposal strategy improvements
- Outstanding rehabilitation, hydrogeological and drainage studies
- Service trenching decommissioning opportunities to reduce overall quantities and cost.

A new Class 4 estimate and associated Basis of Estimate was prepared reflecting the rehabilitation activities, assumptions and clarifications conforming to the MCP's requirements.

Image: Mardie Salt Project Pilbara, WA.

Residue Storage Area - Detailed Design

Client: Confidential

Agilitus worked with our client to re-frame the detailed design of the Residue 2/3 area due to a number of unresolved design issues and unrecognised opportunities to more optimally dispose of filter residue cake.

Outcomes

Agilitus identified a number of unresolved risks and opportunities associated with a previous consultant's detailed design of the Residue Area 2/3 deposition area to optimise deposition of fine grained residue mud. This involved:

- Additional targeted borehole drilling and CPT probing to characterise the extent of saturated, contractive residue mud in the foundations of the new RSA 2/3 deposition area.
- Scoped and supervised additional drying trials, compaction trials and laboratory characterisation of FRC in various states of compaction.
- Designed staged construction of the residue areas to optimise future deposition using consolidation and strength gain of historically deposited residue rather than more costly ground improvement methods.
- Preparation of design report confirming compliance with DEMIRS and ANCOLD requirements.

Mt Marion TSF

Client: Mineral Resources

We developed a TSF Operating Manual for an existing in-pit disposal site in consideration of new environmental operating requirements and the practical needs of the operations team on site.

Change management was required to address new compliance requirements and historical disposal activities. A change in the project engineer of record part way through the process caused disruption and delays to project delivery.

Outcomes

A live tailings operations manual was developed following facilitated meetings between the operations, environmental and corporate management teams.

The site is now operating under the new manual with no identified issues.

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Ravensworth, Bayswater and Liddell TSFs

Client: Undisclosed

The client faced characterisation of cenospheric fly ash and bottom ash for seismic and static liquefaction risk using field and laboratory testing techniques.

Outcomes

We designed the final TSFs with extremely low post liquefaction and residual strength ash tailings. This project involved cutting-edge critical state characterisation of the differing ash streams sampled from each site to assess long term stable slopes and final acceptable closure profiles.

Our Experts

Nico Klopper
Senior Tailings Specialist

Nico is a seasoned mining and construction professional specialising in tailings (surface operations). With a strong background in leadership and business, he has successfully managed complex projects and delivered exceptional results with a proven record both in the domestic and international market. Nico is passionate about driving efficiency and innovation in the industry, aswell as alignment to the required JORC, GISTM, ICMM and relevant dam safety standards.

Nico has worked on various mining projects globally, from conceptualising to execution over four continents. He holds detailed knowledge of geotechnical and water management disciplines. Nico has 18 years of unparalleled tailings operational and technical experience in both deposition and reclamation.

Jason Fong
Director - Geotechnical

With a career spanning more than 30 years – across Australia, Indonesia and Singapore – Jason is an experienced geotechnical engineer. He is skilled at developing business strategies, leading multidisciplinary teams and managing projects for some of the world's leading mining, minerals, oil & gas, and industrial companies, as well as working with utility providers and defence organisations.

Jason is highly sought after for his expertise in ground engineering and for his ability to collaborate with a diverse range of industry specialists in strategic asset management, water supply and water resources, GIS, tailing storage facilities, mine closure and rehabilitation, and community and stakeholder engagement, including First Nations.

Matt Watts
Discipline Lead - Geotechnical

18 years of experience as a geotechnical professional, with a broad understanding of soil mechanics developed through industry experience, solving interdisciplinary challenges, and working directly with clients. His expertise spans from large-scale scoping studies to close collaboration with clients throughout the design stages of projects.

Matt began his career in a tailings design team and has been involved in the investigation and design of both new and existing paddock-style facilities, integrated waste landforms, and valley storage systems across Western Australia, Borneo, and Tanzania. He has a particular interest in material re-use and fit-for-purpose designs that aim to minimise CAPEX.

Sergio Neves
Principal Geotechnical Engineer

20 years of consulting experience in geotechnical investigations for infrastructure projects across Australia and the UK. His work spans a wide range of areas, including the design and construction of retaining walls (embedded, secant, and contiguous), pavement design for highways and railways, slope stability analysis, and foundation design for residential and commercial developments.

Sergio has led numerous ground investigations, providing geotechnical advice on shallow and deep foundation systems, retaining walls, pavement designs (granular and full-depth asphalt), seal designs, liquefaction assessments, and site and soil effluent disposal evaluations. His project portfolio includes commercial and industrial developments across diverse geographies.

Aika Ibrahim
Senior Geotechnical Engineer

Aika's geotechnical expertise spans across private, local government, and public sector projects. Her strong background in GIS analysis and her active involvement with the Infrastructure Sustainability Council of Australia (ISCA) further highlight her commitment to advancing sustainable infrastructure practices.

Aika has honed her skills in conducting slope stability assessments, geotechnical characterisations of tailings, and consolidation and deformation modeling. Her technical proficiency and dedication to excellence have made her a valuable asset.

Sam Gao
Senior Geotechnical Engineer

Sam has experience managing diverse projects, including pavement investigations, residential subdivisions, and commercial land developments. Sam prides himself on his autonomy and high standards of work, while also valuing team input and advice. His technical proficiency in tools such as Plaxis 2D, Settle 3D, HoleBASE, PLog, gINT, and Slide 2, combined with his initiative and efficiency, consistently lead to outstanding project outcomes.

Over the past 12 months, Sam has been seconded to a major alumina provider, where he has played a crucial role in assisting the client on their pathway to GISTM compliance. His responsibilities have included compiling historical site investigation records, preparing standard specifications for hydrologically placed upstream raises, supervising site investigations, and monitoring instrumentation and compliance auditing.

AGILITUS

Shaping Tomorrow Together

Agilitus is a multidisciplinary engineering, design, project delivery and advisory consultancy, providing technical solutions for clients in the Resources, Energy and Industrial sectors. We are majority owned by our employees, who are united by our purpose – together, we embrace innovation to solve complex problems, for today and future generations.

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