



## SUB325<sup>®</sup> SYSTEMS

Resource Recovery, Processing Enhancement,  
and Tailings Management Technology



**SOMERSET**  
INTERNATIONAL

## OUR BUSINESS

At Somerset International we are at the forefront of advanced processing solutions in ultrafine particle treatment across the mining industry. With leading-edge technology, we provide a fundamental change in **Resource Recovery**, **Processing Enhancement**, and **Tailings Management**.

**Resource Recovery** maximizes the capturing of valuable products that were previously discarded in the tailings waste.

**Processing Enhancement** ultrafine separation technology classifies sub 44 µm (**SUB325<sup>®</sup> mesh**) materials by particle size to enable more efficient beneficiation.

**Tailings Management** offers our key dewatering system that delivers dry, handleable solids waste to reduce reliance on tailings storage facility, while also recovering clean, recyclable water.

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## CHALLENGES AND INNOVATIONS IN RESOURCE PROCESSING

In today's conventional resource mineral processing landscape, persistent challenges include declining grades, loss of valuable minerals and materials, tailings disposal, and unsustainable water consumption. Traditional processing methods often fall short in efficiency and completeness compared to Somerset International's innovative solutions.

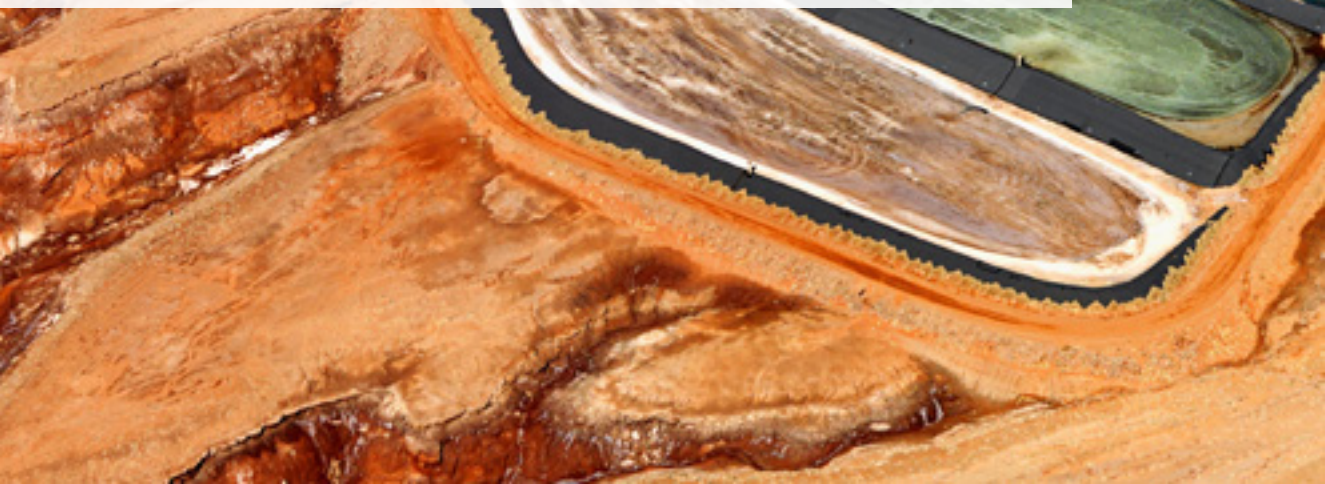
**Somerset International** offers revolutionary resource recovery, classification, and dewatering solutions that address these issues.

Our systems and technology, known as **SUB325<sup>®</sup>**, recover valuable resources previously lost in tailings, reduce operational costs, and minimize environmental impact.

### **Key benefits include:**

- Increased resource recovery and revenue
- Reduced water consumption and elimination of tailings ponds
- Sustainable and continuous process
- Applicability to various minerals such as coal, base metals, iron ore, phosphate, and precious metals

For dewatering applications, our high G-force centrifuges significantly outperform traditional methods (plate presses, belt-filter presses, or vacuum filters) by generating over 3,000 G's of force, delivering more efficient and complete solid-liquid separation and water recovery.



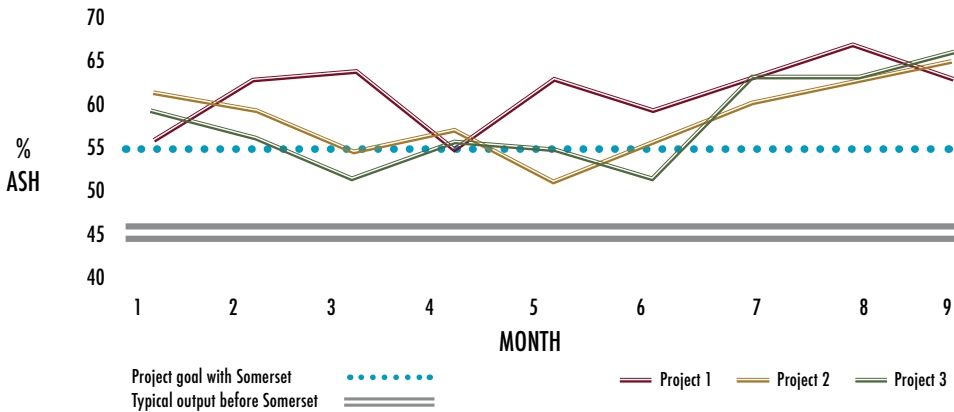
## RESOURCE RECOVERY

### Metallurgical Coal

#### Somerset's Patented SUB325<sup>®</sup> Fine Coal Recovery System

Somerset's patented fine coal recovery systems leverage a decade of development and exclusive partnership with Centrisys, a leader in centrifuge technology. Our high-G (up to 3,000 G) systems excel at maximizing fine coal recovery and moisture control. By incorporating SUB325<sup>®</sup> Effluent Flotation and SUB325<sup>®</sup> Effluent Concentrator technologies (patent pending), we recover valuable ultra-fine coal that would be lost to the tailings, boosting plant-wide performance, with existing installations demonstrating up to a 5% increase in total plant yield and a 15% reduction in tailings volume.

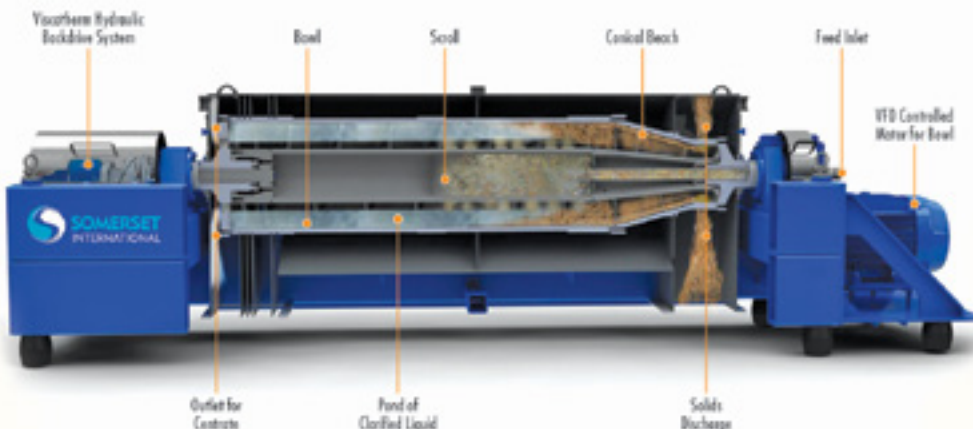
#### Plant Underflow Ash - Indicator of Ultra Fine Coal Recovery



### Iron Ore

#### Iron Ore Tailings Management and Resource Recovery

Somerset's advanced classification system effectively rejects ultra-fine slimes from iron ore, leading to a substantial improvement in product quality and a reduction in tailings generation. The presence of ultra-fine slimes (< 3µm) poses significant challenges to achieving desired grades and recovery of magnetic iron using magnetic separation. Somerset has successfully applied its solid bowl classification technology ahead of magnetic separation to reject ultra-fine slimes (< 3µm). This approach has yielded impressive results, achieving iron grades of over 60% and reducing key contaminants such as silica and alumina by more than 60%. The additional iron ore recovery reduces iron ore tailings by up to 40%. In addition, Somerset technology enables dewatering of remaining tailings solids for dry disposal, further reducing reliance on tailings dams.



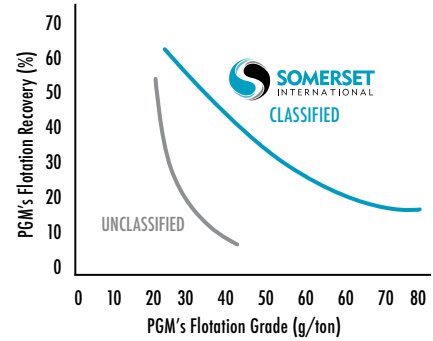
## PROCESSING ENHANCEMENT

### Precious Metals

#### PGM Recovery and Grade Uplift

Somerset's innovative classification technology has doubled the grade and increased throughput in a precious metal sulfide flotation circuit by rejecting ultra-fine talc particles. This technology boosts PGM production by effectively removing ultra-fine talc particles, resulting in faster kinetics with higher-grade and recovery to concentrate.

These advancements highlight Somerset's dedication to optimizing recovery and efficiency in precious metal processing.



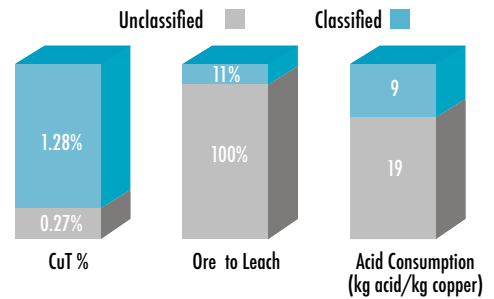
### Base Metals

#### Enhanced Copper Leaching

Somerset has developed systems to extract copper from low-grade historic oxide tailings. By upgrading the feed material through classification, we can improve the economics of direct leaching by:

- Increasing copper grade: Concentrating the copper content in the feed material.
- Reducing acid consumption: Lowering the amount of acid required for leaching.
- Optimizing capital investment: Reducing the size and cost of downstream hydrometallurgical processing.

Somerset's approach offers a sustainable and efficient solution for copper production, unlocking additional resources and minimizing environmental impact.



## TAILINGS MANAGEMENT

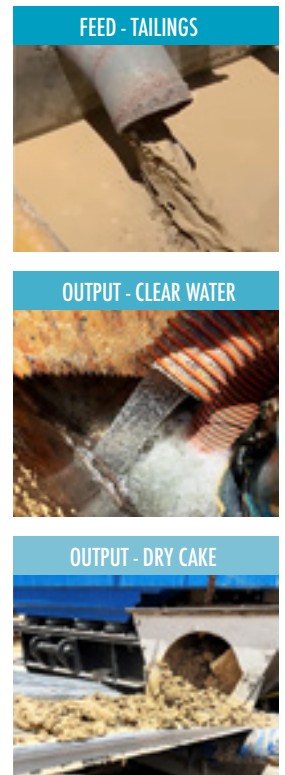
Somerset is working with major, global industrial mining companies to reduce their tailings waste footprint and lessening the need to draw upon scarce ground water supplies in arid regions.

### Phosphate

#### Phosphate Tailings Management

Somerset offers extensive expertise in mineral and water recovery for phosphate operations. Our advanced tailings dewatering system recovers over 70% of water from the slimes (< 40 μm) tailings stream, delivering high solids recovery (> 98%) and low moisture cake suitable for dry disposal, along with low solids content (< 1%) centrate for on-site reuse as process water. Our patented and patent-pending technologies reduce the need for costly additives, such as flocculants, optimizing the process.

Additionally, Somerset has developed a flow sheet that recovers high-grade phosphate rock, exceeding 70 BPL (32% P<sub>2</sub>O<sub>5</sub>), from slimes tailings. This system uses our proprietary classification method to remove clays ahead of flotation. The remaining tailings are dewatered into a manageable cake that can be emplaced and consolidated to meet acceptable standards, eliminating the need for tailings dams, and ensuring sustainable waste management practices.



## TAILINGS MANAGEMENT

### Base Metals

#### Copper Tailings Management

Somerset is at the forefront of innovative solutions for addressing water scarcity challenges in the copper mining industry, particularly in arid regions like Chile's Atacama Desert. Through cutting-edge dewatering technology, our pilot scale testing has achieved a remarkable 99% solids recovery from copper tailings, returning nearly pure water for reuse in the mining process. This sustainable approach significantly reduces water consumption and environmental impact, with the aim of making copper mining operations in these regions more eco-friendly.

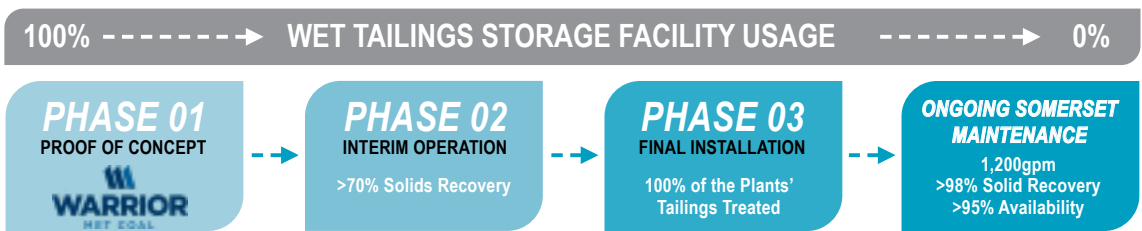
### Coal

#### Coal Tailings Management

Somerset has partnered with Warrior Met Coal (AL, USA) to implement a dry tailings system that treats 100% of the No. 7 plant slurry tailings. Warrior earned the 'Water Quality Stewardship Award' in 2022 for the use of this advanced system and the coal recovery systems in place.



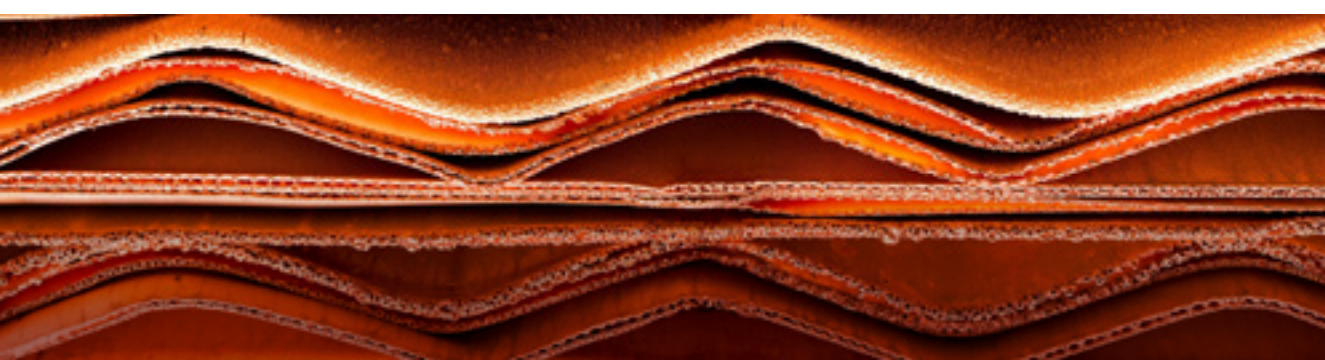
### TAILINGS MANAGEMENT SYSTEMS



The phased implementation provided a flexible approach allowing for gradual implementation and proof of concept. This was accomplished given Somerset's modular designs and short equipment lead times. With Somerset operating the system, Warrior benefits from ongoing optimization through continuous improvement of the system to maximize efficiency and minimize environmental impact.



WARRIOR NO. 7 PLANT COMMINGLED TAILINGS DISPOSAL

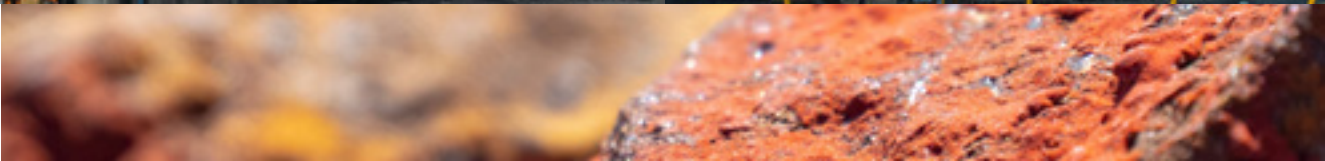
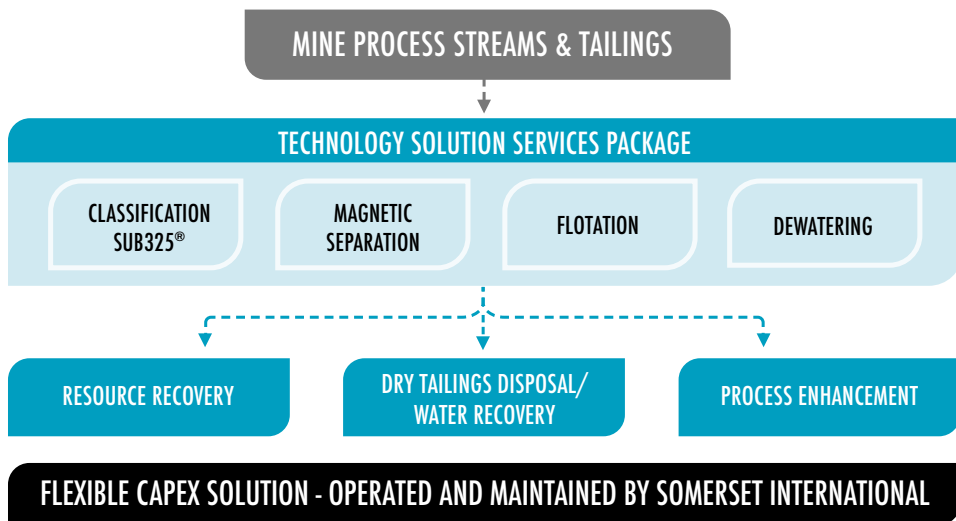




## SOMERSET INTERNATIONAL OFFERS A TRANSFORMATIVE APPROACH

Somerset International offers a unique business model centered around our innovative service solutions. We provide the installation, operation, and maintenance of our systems with often no upfront costs - our services are performance-based.

Somerset has a proven track record with over 30 successful operations worldwide with major mining companies. Our focus is on sustainable tailings management and maximizing plant recovery through integrated solutions, to improve overall processing efficiency and to minimize waste.





## OUR PEOPLE

Our team at Somerset International comprises globally recognized leaders in metallurgy, materials handling, and engineering, with decades of experience across international resource industries.

We specialize in advanced techniques for tailings dewatering and ultrafine separations technology, using our diverse skill set encompassing design, engineering, and operations.

This collective expertise allows us to deliver comprehensive solutions that optimize efficiency, ensure environmental responsibility, and exceed regulatory standards.

At Somerset International, our team's commitment to excellence drives our approach, enabling us to tailor innovative solutions that meet the unique challenges and goals of our clients across various sectors worldwide.

We are constantly seeking new applications to enhance the recovery of valuable materials from mining waste streams, adding even more value for our customers.

# SUB 325<sup>®</sup>



# SUB325®

## YOUR SERVICE AND SOLUTION PARTNER IN RESOURCE RECOVERY, PROCESSING ENHANCEMENT, AND TAILINGS MANAGEMENT TECHNOLOGY

Coal, Base Metals, Bauxite, Iron Ore, Phosphate,  
and Precious Metals

Since 2016, Somerset International has installed resource recovery and tailings management systems in more than 30 locations globally. At Somerset International, we offer a unique service under a performance-based model. Somerset provides a full solution, including design, equipment supply and installation, operations, and maintenance to maximize benefits for our clients.

With our team's combined experience and expertise in mining, manufacturing, and technology development, we maintain an exemplary safety record at all locations.

*Partner with us to elevate the sustainability of your mine processing plant and achieve your ESG objectives. Reach out to Somerset International to discover how our solutions can align with your goals.*



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