

Terex® AggreSand™ 165 Case Study

Dubbo Sands, NSW, Australia



Mineral Washing Systems (MWS), Terex Washing Systems (TWS), distributor in Eastern Australia recently installed the first AggreSand™ Washplant in the Australian Market, located at Dubbo Sands Quarry, NSW.

First AggreSand™ on Australia Shores

Dubbo Sands, based in NSW, Australia, is a privately owned and operated business that was formed by owners, Mardi & Graham Colbran in 2003. The company is a leading producer of sand & gravel serving Central West NSW. They offer a range of products including washed all in sand, washed coarse sand, washed fine sand and washed riverstone in many sizes.

Efficient Delivery and Installation

TWS, MWS and the customer, Dubbo Sands, worked together to devise a solution to meet the site specific needs. After careful analysis of the feed material it was identified that a portion of the Dubbo Sands feed contained high levels of silt therefore demanding a system that would deal with this in one pass. With their old wash plant Dubbo Sands often had to wash this difficult material twice. MWS proposed the TWS AggreSand™ 165, with a three deck aggregate screen and a single sand plant. The AggreSand™ 165 provides a fully integrated feeding, screening and sand washing solution on one modular chassis. The entire wash plant including the pre-wash system was transported to Australia from the TWS factory in Dungannon, Ireland, in just seven 40' shipping containers. The modular, pre-wired and pre-plumbed concept of the AggreSand™ 165 allowed for rapid deployment once delivered to site. The plant was fully erected and commissioned within a matter of days.

Feed System

Dubbo Sands wanted the ability to blend varying feed materials from their site and so a dual feeder system was proposed. The feeders both have a 12m³ capacity and were configured so that the two grades of feed material can be blended at different rates before being conveyed to the washplant. Both 14' feeders are powered from one electric hydraulic powerpack and both have remote control hydraulic tipping grids.



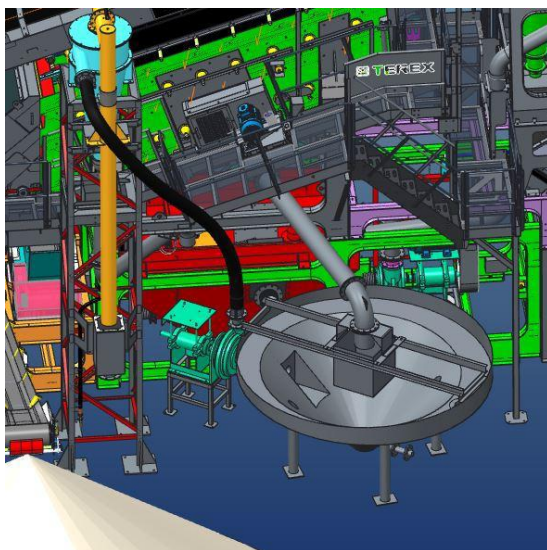
The blended feed material is delivered to the 16x5 screen by a heavy duty inclined feed conveyor fitted with a 1000mm belt. At the head of the conveyor an integrated wash box gives the material an all-important pre-soak to pre-condition before going on to the screen.

Aggregate Rinsing Screen

The highly efficient two bearing 16x5 gives a true 80ft² screening area on each deck. The high quality polyurethane modular deck adds excellent screening and wear qualities to the aggregate rinsing screen. The isolated spray bars fitted with polyurethane gators mean that the spray bars remain static as the screen vibrates. The screen is powered by a 15Kw electric motor and has a 10mm throw. Access around the screen is excellent with the walkways on all four sides and an innovative rolling chute to allow easy screen/module access. The inclined feed conveyor is fitted with hydraulic rams which allow the conveyor to be raised above the screen for even greater access.

The top deck acts as a protection deck while the top and bottom deck materials are stock piled by the AggreSand's™ integrated nine meter stock piling conveyors. These conveyors each have a stock piling capacity of 150m³. The conveyors are powered by an electric motor and have a 650mm wide belt.

Pre-Wash System



The pre-wash system is one of the first of its kind in Australia. The polyurethane in the bottom deck of the aggregate screen is split 1/3 -2/3 sections with 1mm and 4mm polyurethane modules respectively. The catchbox under the screen is specially designed to capture and separate the two grades of sand (0-1mm & 0-4mm). The fine material which passes through the 1mm section of the screen is safely collected and piped to the pre-wash conical sump tank. The conical sump is designed to initially float off any light material (silt) with the heavier material dropping to the bottom of the sloped wall tank.



The conical sump is designed to enable regulation of incoming water and solids flowing in varying conditions without the loss of useful fines.

A rubber lined centrifugal pump then transfers the material from the bottom of the tank to a cyclone/separator. The separator gives a secondary cleansing of the sand and removes more material below 75 micron and sends it off to the Dubbo Sands dirty water management system. The beauty of the separator is that it has an ability to cope with varying levels of silt due to discharge regulator which ensures a constant underflow density. This ability to deal with varying silt levels was Dubbo Sands number one specification for the entire plant. The adjustable air bleed off valve enables vacuum control which affects the moisture content underflow material.

The overflow material is directed towards the Dubbo Sands water management system while the underflow is piped to the AggreSand's™ sand plant.

Sand Plant

The pre-washed sand enters the AggreSand's™ sump tank and is pumped by a rubber lined centrifugal pump to a cyclone to remove any remaining silt (<75micron) before being dewatered on a 12x5 dewatering screen. The dewatering screen is producing sand below 12% moisture, which eliminates the need for stock pile drainage. This is a windfall for Dubbo Sands as demand is high for this quality concrete sand, which is instantly saleable and can be loaded onto a truck from the stock piler belt. In addition the plant is producing two washed aggregates from a 200tph feed. Niall Donaghy, Sales Manager, MWS, commented, "We were delighted when Dubbo Sands selected MWS as their preferred supplier for the washplant. The new plant is fully satisfying the customer's aggregate washing needs. The Aggregate screen is fitted with a 65mm top deck, 22 mm middle deck and the split 1mm/4mm bottom deck. The high efficient 16x5 screen is producing clean aggregates which are being used as drainage stone, landscaping stone and for concrete production.

Mardi and Graham Colbran, Dubbo Sands Owners, commented "The professionalism and dedication from the entire MWS team, starting with purchasing right through to commissioning has been outstanding; we feel that there is nothing else currently on the market, that even comes close. Our AggreSand™ washplant incorporates the Pre Wash system which enables us to bring our sand into spec in just one pass, whilst producing clean sized aggregates, giving us a very cost effective operation. Everyone worked extremely hard to pull this together, and we are positive ours will be the first of many hitting Australian shores."



Wealth of Knowledge & Expertise

MWS have more than 35 years of industry experience, and are one of the TWS's leading distributors in Australia, providing cohesive solutions for all material and mineral washing needs. They have extensive product and application knowledge which benefits clients throughout design, installation, commissioning and after sales support.

Fergal McPhillips, TWS Sales Manager, commented "MWS have grown from strength to strength, clearly demonstrating an acute understanding of the washing demands in Australia. They have greatly increased market share and have expanded their business line for greater future growth within all washing segments such as speciality / recipe sands, concrete and building sands and in wash recycling. The recent launch of the AggreSand™ in September 2013 helped pave the way for helping to establish TWS as a market leader."



L – R: Fergal McPhillips, Sales Manager, TWS, Graham Colburn, Owner Dubbo Sands, Niall Donaghy, Sales Manager, Mineral Washing Systems

Prospective Customers Attend Open Day

Dubbo Sands, hosted TWS's first, of several, "Open Day" events in 2014 where they welcomed prospective customers to the event. Attendees were clearly impressed with the plant which was evident from some customer feedback; one commented "very impressive and clearly an efficient unit", another customer stated "I was impressed by the modular system, with the

quick set-up and ease of maintenance” a third one added “ the Open Day was extremely informative, presented by staff who were knowledgeable and experienced.”

Fergal McPhillips, TWS Sales Manager, commented, “The Open Day proved to be another successful showcase for TWS. Reaction to the plant was exceptional and we received immediate orders as a result. The AggreSand™ 165 washplant is continually proving to set TWS apart from other providers in the market and is revolutionizing the washplant market by introducing innovative solutions and continuing to serve our customers’ needs and demands around the world.”

Mardi and Graham Colbran, Owners of Dubbo Sands commented “Dubbo Sands where so proud to be involved with TWS and MWS in hosting the very first AggreSand™ 165 washplant release in Australia. The Open Day was a huge success, with so many positive comments; we know we made the right decision. The knowledge and expertise has been proven on the ground, with the team sent from Ireland, working alongside Niall, we have exactly what our quarry required and more.”



To find out more or to discuss specific washing requirements, contact us at TWS.Sales@terex.com or visit our dedicated website which provides an overview of the full product offering at www.terex.com/washing

