



CONSTRUCTION

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Consep's Canadian expansion

Cadia upgrades to the latest sampling technology

Newcrest is amongst the world's leading companies when it comes to the implementation of correct sampling in their projects. They utilise the skills of world renowned sampling expert, Dominique Francois Bongarcon to assist them in adopting correct sampling and have always installed true inventory style samplers for their metallurgical accounting duties. Their projects, including Cadia, Lihir and Telfer, extensively use Consep's H&S sampling technology.

Recent upgrades at the Cadia plant had resulted in the need for a new tailings sampler to handle the increased 5,500m³/h tailings stream. The sampler was custom engineered by Consep with a primary sampler enclosure designed to interface with the chute work and structure on site. Our metallurgical samplers are always designed to meet Australian/International sampling standards and guidelines. With all our sampling projects, we typically carry out detailed sampling protocols, model inlet velocities and slurry trajectories to ensure they meet established guidelines.

The new tailings sampler is Cadia's first installation of our latest technology in linear sampling, the extreme duty 1365 belt drive sampler. This sampler mechanism was

developed by Consep to meet the challenges of the iron ore industry, and has proven to be reliable in the demanding environment and throughputs of Western Australia's Iron Ore industry. The use of a belt driven sampler is not only much heavier duty, but also results in higher corrosion resistance.

The new tailings sampler incorporates the extreme duty 1365 linear cross cut primary sampler and a new swirl tank for feed preparation to the secondary sampler. The existing Consep secondary swirl tank, secondary and tertiary vezin samplers and control system, that were part of the our original Cadia tails sampler installation, were able to be reused in the new, upgraded capacity tailings sampler.

Consep has been supplying Cadia with sampling equipment since 1999, with metallurgical samplers installed in all their major concentrate and tailings streams. This is in addition to numerous trending samplers feeding OSAs for operations and process optimisations.

The tails sampler was successfully commissioned in July 2018.



Another Consep DAF for Perth



More Consep Acacias around the world

Consep and Heath & Sherwood

Consep and Heath & Sherwood have worked together for over 20 years, with Consep representing the H&S sampling range. Heath & Sherwood are a Canadian legend with a continuous 90 year history of designing and manufacturing equipment in the historic mining centre of Kirkland Lake.



Over their 90 years of operation Heath & Sherwood have partnered with local mining companies, like Noranda, to develop a wide range of technology for sampling and the smelting industries. H&S have an office in Toronto, and their head office and manufacturing facility is located in Kirkland Lake, Ontario.

Our long term partnership has taken a new path during 2018, with Consep taking part ownership of H&S. The change in ownership creates many opportunities for both companies, most obviously to see the complete range of sampling equipment offered worldwide with our newly integrated companies.

Our goal is to grow the H&S business with a long term commitment to available resources. The expansion to products and services that Heath & Sherwood will be able to offer will be supported by Consep's staff both in Canada and Australia. H&S will be supported by Consep's engineering and automation departments, and we will launch our range of bulk commodity sampling equipment to North America. Consep gains access to the H&S North American manufacturing centre to further launch our range of equipment to the world market. It is a partnership that will see both companies around for at least another 90 years.

Consep opens new office in Vancouver

Consep is very pleased to announce the opening of a new office in downtown Vancouver in Canada. Joining us as foundation members of our Vancouver office are Mike Fullam and Steven Corsan.

Mike needs no introduction to the gravity gold industry due to his 20 year long association with the Knelson Concentrator. Mike is world renowned for his knowledge in gravity recovery, especially when it comes to predictive modelling and auditing of gravity circuits. Mike has been a long term part of the Amira P420 Project, and brings with him a wealth of knowledge to bolster our team. Mike will continue to support gravity recovery customers worldwide, with a particular focus on North American clients of the Knelson Concentrator – Consep Acacia product partnership.

Steven Corsan joins our company as our North American Regional Manager. It could be said that Steven has the gold industry in his veins, as he is the son of the former VP of Knelson Concentrators of Canada, Doug Corsan. He is also the grandson of the inventor of the Knelson Concentrator, Byron Knelson. Steven joins us to start his own legacy, working with us to promote the Consep Hoist into the North America's Construction industry, and to oversee the process of integrating Consep and H&S.



Consep Dryer delivers results for Fulton Hogan



Consep developed a custom designed dryer to meet the requirements of Fulton Hogan at their Minto operation.

Recently, Consep was engaged by Fulton Hogan to provide process & engineering expertise to help overcome issues with an existing dryer at their asphalt plant in Minto, NSW. The existing dryer was routinely running out of position owing to incorrect design and poor installation. Feed spillage was the main outcome of these issues along with excessive costs and resources for maintenance and spare parts.

To overcome the issues with the equipment, Consep supplied a custom engineered and manufactured dryer to suit the existing bed frame, which includes the trunnions and drive. To ensure that the dryer would interface correctly with the site infrastructure, Consep's engineering and specialist fabrication team spent many hours surveying and measuring the existing equipment.

This dedication to accuracy was rewarded when the dryer was safely installed over the 2017 Christmas/New Year period without incident, on budget and without delay. The dryer has been operating trouble free since installation with the State Manager commenting that he was extremely happy with the job performed by Consep.

Consep's extensive experience in the design and manufacture of rotary equipment allows us to develop customised solutions. Our unique combination of process, mechanical and automation engineering, with in house manufacture, allows us to develop solutions that will meet our clients requirements.

Please do not hesitate to contact us if you have any questions regarding an under-performing process plant.



Mount Morgans Off to a Flying Start



The Dacian Mount Morgans Project in Western Australia is a traditional gold plant utilising the proven option of crushing – milling – gravity circuit – CIL circuit, together with the proven option of utilising an experienced Australian engineer and contractor: GR Engineering Services.

It is therefore not a surprise that the plant results are within expectations when compared to the Mt Morgans 2016 Feasibility Study, and in its maiden quarter the processing plant is already producing gold within guidance, targeting 180,000 – 200,000oz per annum.

As a result of taking the right options for the Mount Morgans mine and plant, the financial position of Dacian is strong, with drilling occurring on adjacent exploration areas and a strong and stable share price.

The Mount Morgans gravity circuit is designed to maximise gold recovery at the

project, utilising a complete package of equipment from Consep. This includes a 1.8m x 4.8m SDS Vibrating Screen, dual QS40 Knelson Concentrators, Consep Acacia CS3000 Dissolution and Electrowinning Modules, including electrowinning cells.

All of the gravity package, including the automation system, was manufactured in our Australian workshop. The gravity circuit was immediately in production from first ore into the plant, with the first gold pour coming from the gravity circuit. The gravity circuit was successfully commissioned by Consep's Juan Carrillo, who is a member of our team of gravity recovery specialists.

Consep moves to new office in Perth

Consep has had an office in Perth, Western Australia, for close to 20 years. The Perth office is the centre of our process team, who provide service and support to our clients around the world.

For the last ten years our office has been located in Belmont, an industrial suburb to Perth's east. The new office places us in the heart of Western Australia's mining industry corporate offices, at 111 St Georges Terrace, Perth. Our four immediate neighbours include BHP to the West, RioTinto to the North, South 32 to the East and Resolute Mining to the South.

The new office provides much greater access to our clients corporate offices, as well as expansion potential to meet the growing needs of our clients around the world, and will provide a much better work life balance for our team of busy travelling engineers.



Consep reduces carbon footprint



Consep's head office, located in Wetherill Park in Sydney, is a purpose built 10,000m² office and manufacturing facility. The facility was opened in 2012 to meet the expansion and growth of Consep.

Recently Consep undertook a project, carried out by our graduate engineer David Truskett, to investigate the options available for the installation of a renewable power supply to our premises.

The detailed analysis reviewed our power consumption, and then developed a plan to optimise power generation on site. Due to Consep's peak power demand occurring during daylight hours, and with a large expanse of workshop roof available, this created an obvious advantage to installing a solar power system.

The new 100kW system is in commissioning at present, and is expected to reduce the power demand, and hence our carbon footprint related to power consumption, by 50%. The system has also been designed to be future proof to allow the retrofit of batteries. The system has been extensively modelled, and is expected to generate 144MWh annually with a projected payback period of under 4 years. Not only does the system reduce the carbon footprint of the equipment we manufacture, it will provide long term sustainability helping us minimise the impact of power price increases, allowing us to keep our equipment prices stable for as long as possible.

More Consep Acacias Around the World

The installation list for Consep Acacias continues to grow, with well over 150 units installed worldwide. The Consep Acacia is the world's leading system for leaching of gravity concentrates, generating over \$10B per year of gold.

The last few months has been busy for the Consep Acacia. The Consep Acacia is used for processing of the concentrate from the Knelson Concentrator, producing a high grade solution suitable for direct electrowinning. Our most recent projects have included units for Mangazeya (Russia), Golden Valley (Zimbabwe), Goldfields Tarkwa (Ghana), Resolute Syama (Mali), Lundin Fruta Del Norte (Ecuador), Billabong Plutonic (Aust.), Roxgold Yaramoko (Burkina Faso), Halls Creek (Aust.) and Ma'Aden Sukhaybarat (Saudi Arabia).

Our team has also been busy travelling the world to commission new equipment, and also to conduct Health Checks on our customers gravity circuits.

The Health Check system is an innovation in support and service developed by Consep to track the site visits we make to existing clients, and to bring this together with key spare part consumption and make sure they fall within acceptable ranges. Ultimately this allows us to provide proactive technical support, ensuring the equipment we supply to our customers is operating optimally.



One Dozen Consep DAF Units for WA

In May 2018 Consep was awarded a contract for the supply of our 12th Dissolved Air Flotation (DAF) unit for another municipal waste water treatment plant (WWTP) in Western Australia.



A DAF system is used to thicken the excess activated sludge (EAS) generated during the treatment of waste water. The untreated water containing the EAS is introduced into the tank, and air is added to float the EAS from the water. The rising gas bubbles attach to the EAS material, whereupon they form a floating layer which is removed by a surface skimming mechanism. The clarified water exits the tank from a point well below the surface and owing to the high clarity, a significant portion of this flow is used to transport the air back into the tank via a dedicated recirculation system.

Consep's Westech DAF technology is used extensively in Western Australia, with our unique circular DAF technology now

installed in eight different plants, including the state's largest WWTP. Importantly, Consep DAF units continue to perform well, typically producing thickened EAS concentrations of 3.5% - 5% with greater than 98% capture, without chemicals. The units run reliably with little or no operator intervention, with over a decade of proven performance at existing WA sites.

The installation and commissioning process will be supported by our team of water specialists in Perth, including Peter Hay for installation and Alex Vo for commissioning. These personnel represent the core of the team that delivered the successful installation of the 11 previous DAF units in each of the eight WWTPs in WA.

Consep Hoists used for Marina Square

Consep provided two latest generation Model CH200 Consep Hoists for the Marina Square development and delivered end-to-end support and services for the project's duration.

The final Consep Hoist was decommissioned and removed from Billbergia's Marina Square Block E3 during July, marking completion of the structure. Consep Hoists were utilised throughout all stages of the Marina Square project located at Sydney's newly developed Wentworth Point. The Consep Hoists were used to cycle formwork and other building materials within the construction zone, ensuring safe, efficient and reliable transport of materials while taking pressure off the tower cranes. In particular, the Consep Hoist's unique ability to service the Live Deck and provide immediate service to the freshly poured slab, even in high winds, streamlined formwork cycles.

"I would like to thank Consep for their services on the project. The hoist in my opinion delivered and the feedback I received from the

formworkers was positive. During the life of the project the hoist operated without fault and the climbs were very efficiently done," commented Sam Brown, Structures Foreman for Billbergia.

As one project is completed, another gets under way with a Consep Hoist commissioned on ProBuild's Greenland Centre Sydney project on Bathurst Street in Sydney's CBD during July. Set to be the tallest residential building to grace Sydney's skyline the Greenland Centre Sydney will rise 235m above ground. The Consep Hoist was put to good use immediately to cycle a back log of formwork and other material. Trazmet, the project formworker is now able to transport material safely and efficiently without reliance on the site cranes. With the structure scheduled for completion during 2019, both Consep and the Consep Hoist have some exciting work ahead.



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