

MCMAHON SERVICES



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The PREFACE

'The journey is the treasure' – and how true that is.

Brothers David and Andrew started McMahon Services over 20 years ago with just a small team of 12 based in Dry Creek, South Australia.

Fast forward to 2013, the business is now operating across Australia, with a team of over 450 personnel tackling some of the toughest construction services projects.

Our journey is continuing to take us to new horizons and we have just scratched the surface. We never want to forget where we came from, but we know the adventures are just beginning.

The Works is your window into our world. The new "look and feel" for the publication is a reflection of our journey and we are thrilled to present this next chapter.

Cover Image: Acid Sulphate Soils treatment at Narrows Crossing in Queensland





MD's MESSAGE



Going the distance

If you are willing to tackle the tough jobs and travel the distance, doors will always open.

In these challenging times, developing smarter solutions and having a "can-do" attitude drives stronger productivity. But what does it take? Understanding client needs and going the extra mile.

McMahon Services has been pushing the envelope, extending our boundaries of performance - from treating over 50,000 cubic metres of Acid Sulphate Soils in Gladstone, to remediation works for the Royal Australian Navy in Darwin, and removal of over 50,000 square metres of asbestos sheeting in Port Adelaide.

Intract has also completed their largest project – the civil works package for the Santos Mereenie Oil & Gas Fields. More than just about capital and energy growth, this project gave Aboriginal people a stakehold in the investment through employment.

The industry has also recognised our work – receiving our third consecutive CCF Earth Award, this time for the Adelaide Oval Redevelopment detailed civil and stormwater works. We were honoured by the achievement and acknowledgment from our peers.

We look forward to approaching the second half of the year with the same enthusiasm and determination to deliver.

David McMahon *Managing Director*

A triple WIN



There were cheers all around at this year's South Australian CCF Earth Awards, as our Civil Division claimed victory for Category 2 for the third consecutive year.

This year the team was recognised for the Adelaide Oval Redevelopment detailed civil and stormwater works.

The team was praised for construction excellence – installing a new stormwater system designed to catch run-off from the new precinct, which demanded two crossings from the oval, across a busy road, through adjacent parklands and into the River Torrens – one of the State's most significant rivers.

Managing high-risk works in Adelaide's city centre and maintaining the integrity of the River's water quality was a tough challenge – but our innovation in design, strong environmental management and manpower was the right mix for success.

Congratulations to the project team on this milestone achievement.

3RD
Consecutive
win at CCF
Earth Awards

A BASH to Remember



For two years now, McMahon Services has been sponsoring the Royal Australian Navy Bash Team for the Variety NT Bash.

Working closely with Spotless on projects across the Northern Territory, McMahon Services has formed a close partnership with Defence and was proud to get on board with the inspirational children's charity.

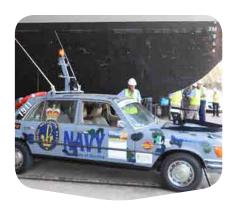
The Variety NT Bash sends teams on an epic adventure to explore the remote corners of the outback, to help raise money for children with special needs and their families.

McMahon Services joined the Royal Australian Navy at a sponsorship function, where our team donated \$2,000 to the team and a fantastic cause.

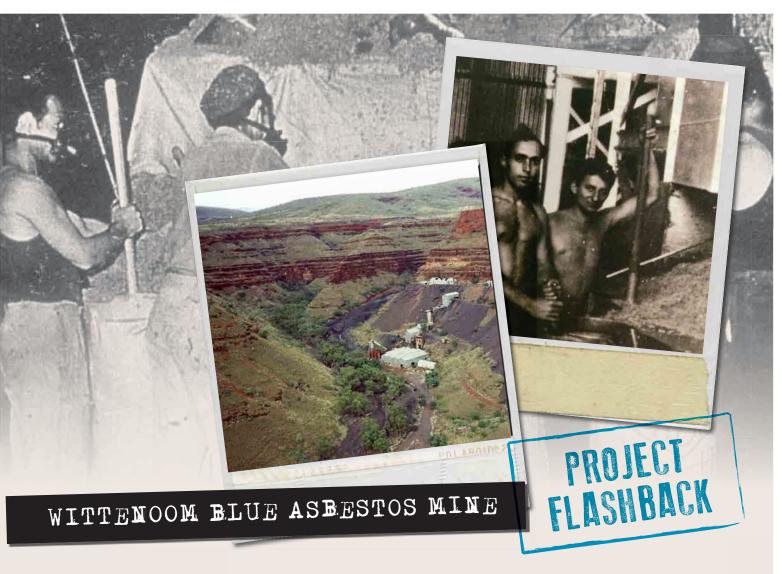
This year the team will set out on the "Wine to Vine" adventure, starting in South Australia's iconic town of Tanunda in the Barossa Valley, making their way right through to Ti Tree, north of Alice Springs.

We wish the Royal Australian Navy team and all of those involved in the Bash the best of luck.

McMahon Services has formed a close partnership with Defence and was proud to get on board with the inspirational children's charity.







Let's set the scene. It's 1943 in a remote town in the Pilbara Region of Western Australia. Existence of Crocidolite (a fibrous form of asbestos) sparked a major mining operation and created jobs for over 7,000 miners.

For a young man in this time, Wittenoom appeared to offer good prospects. The mine was full of promise. As inexperienced miners, working conditions were poor, but what a worker would earn in two years could support his family for a lifetime.

To increase the production of the rapidly growing asbestos mine, the Western Australian Government and the mining group established the township of Wittenoom to accommodate a community of 20,000, including families and local workers.

Now let's fast forward the clock to 1966. The two operating blue asbestos mines close due to claims of lack of and the falling of asbestos prices.

Today Wittenoom is a virtual ghost town, home to only approximately eight residents, with no access to services.

Thirty years later, McMahon Services embarked on one of its largest asbestos removal projects in the company's history.

Contracted by the Building Authority of Western Australia in 1996, we mobilised to the Wittenoom Township ready to tackle an extensive two stage project to decontaminate the town as well as the mine site.

Within the township, the project team deconstructed approximately 220 asbestos contaminated buildings including a hotel, bank, hospital, cinemas, racetrack and residential housing. Asbestos tailings were discovered in road building materials, driveways and house pads.

Demolition works were carried out with the town still occupied with around 20 residents and some operational facilities.

The once robust but then deserted mine site, demanded removal and stabilisation of 60,000 cubic metres of debris and soil grossly contaminated with Crocidolite asbestos mine tailings and raw asbestos fibres.

Approximately 10 kilometres from the town centre, the team excavated a purpose built and engineered landfill site. Once the asbestos material was disposed of, the material was capped. This was the safest disposal method. As a mineral fibre there was no potential for future leaching.

McMahon Services had to meet strict safety standards required by the Australian and Western Australian Government statutory regulations.

All personnel were equipped with full protective clothing and respirators for the duration of the project.

Specially designed earthmoving equipment and vehicle air conditioning systems were manufactured to protect operators from asbestos exposure. Dust suppression was also critical, with air sampling carried out for the duration of the project.

Since the completion of the project, the Western Australian Government officially closed the town. Some say Wittenoom is picturesque landscape, but for many, it will always hold the memories of a "Blue Sky Mine" (Midnight Oil - 1990).



SETTING UP CAMP IN MEREENIE

OUR BUILDING SERVICES CREW JOINED OUR INTRACT TEAM ON SITE AT THE MEREENIE OIL AND GAS FIELDS CONTRACTED FOR THE CAMP UPGRADE WORKS.

The asset is set to double the energy company's oil production and ramp up gas supplies, with a demand for new facilities as the operation expands.

A team of 21 from McMahon Services, including six Intract workers, mobilised from Adelaide to the remote site in late February.

Through a strong relationship formed with the Central Land Council (CLC), McMahon Services also engaged two local Aboriginal men to work on the project.

Before the team could start on the upgrade, a temporary camp was set up on site and a new road constructed to assist with crane and building deliveries.

The existing camp accommodation blocks and laundry were then demolished making way for the new ensuited facilities.

In preparation for the new modular accommodation blocks, six new pads were constructed along with associated footings, putting our new mobile concrete batching plant to work.

The new modular buildings had to be transported from the on-site workshop to the camp site, approximately one kilometre away. The team utilised a 100t and 250t crane to transport the six, two-storey buildings, complete with ensuited facilities.

Once delivered, the buildings were assembled, including a new laundry facility. Verandas, staircases, laundry shoots and a dumbwaiter were also installed.

Finishing details included all associated plumbing work, installed new roofing on the verandas and constructed concrete footpaths.

Set up and ready to go, the camp was successfully handed over to Santos personnel.





Asbestos dust and debris settling on glass bottles stored in Gillman, South Australia, prompted a quick response to decontaminate the facilities and remove the asbestos roof sheeting and wall cladding.

The asbestos and roofing teams worked together to remove an incredible 50,000 square metres roof and wall cladding from three warehouses within a distribution centre, before reinstating.

To ensure safe removal, the project team used an engineered sea container with a specially designed frame for an oversized bin to sit on top.

The two stack system was then placed on a forklift, with personnel working from within the lined bin, passing sheets down from the roof ready for stacking. Internal office cladding, floor tiles, electrical backing boards, gutters and downpipes were also removed.

The Asbestos Contaminated Dust (ACD) was formed through continual building movement, with the asbestos roofing and wall cladding shifting over time.

This called for all internal building surfaces to be decontaminated utilising specialist vacuums, reaching even to the underside of the roof purlins and rafters.

The warehouses also required structural repairs and abrasive blasting to clean rusting column bases, before applying protective coatings.

Working in a systematic cycle, the roofing team then began reinstatement works including gutters, stormwater downpipes and safety mesh.

This extensive \$3.8 million project called for a team of over 25 full-time personnel with two crews working side-by-side to deliver the works.

50,000M²
Asbestos
roof & wall cladding
REMOVED



WE ARE COMMONWEALTH PROUD

THE GOLD COAST WILL PLAY HOST TO THE NEXT COMMONWEALTH GAMES IN 2018 AND MCMAHON SERVICES IS PROUD TO BE PART OF THE TEAM PREPARING THE NEW \$41 MILLION AQUATIC CENTRE.

The Queensland community has been watching closely with the redevelopment now well underway.

McMahon Services was contracted to demolish all existing structures, including the main grandstand, rock retaining walls and filtration systems, along with pavements.

The project team worked carefully to protect the existing competition pool, diving pool and training pool earmarked to be incorporated into the new facility. It was critical to not only protect the integrity of the pool surrounds but also the associated pipework and concrete dive tower.

Temporary fencing was in place and the existing filtration system was disconnected, capped and modified to connect to a temporary filtration unit to keep the pools maintained for the duration of the demolition works.

The team was equipped with four excavators on site, ranging from 5 – 45 tonnes, working in a close wise sequence to minimise risk to the environment.

An impressive recycling outcome was also achieved on the project. Over 85% of all demolished materials, including 1800 tonnes of concrete, were transported to a crushing/recycling facility, and all ferrous and non-ferrous metals were taken to scrap metal merchants.

This highly synchronised and meticulous demolition has now made way for a new world-class sporting facility in our Sunshine State.







ACID SULPHATE SOILS with a twist of lime and innovation

On the back of treating 15,000 cubic metres of Acid Sulphate Soils on Curtis Island in preparation for the construction of Bechtel's LNG facility, McMahon Services was awarded an additional contract on the mainland.

Our Civil Division successfully treated an additional 50,000 cubic metres of Acid Sulphate Soils in Gladstone at The Narrows Crossing – known for its strict environmental regulations, with the route crossing the Kangaroo Island Wetlands on its way to the facility.

The material was wet/sloppy marine sediment and the acidity was highly heterogeneous. To effectively treat the material, the team utilised our companyowned Komatsu Reterra BZ210-1 G-Mode – a specialist soil conditioner along with a calculated dose of aglime.

The developed treatment system was a modification of the Reterra, in order to dose the material with the neutrailising reagent at a relatively high ratio. Instead of using the Reterra's own reagent dosing system, an external feed hopper and conveyor system was developed to dose the aglime.

The project demanded significant sampling and record keeping requirements. Careful coordination was needed to deliver samples to a laboratory and to release batches once results were returned. McMahon Services recorded 'zero rejects' for the duration of the nine month project.

McMahon Services' innovative treatment method not only saved significant amounts of storage areas on the busy site, the method allowed the material to be reused for other critical construction components.

Compared to the traditional 'land farming' method of spreading the lime across the site using a tyne and turn method on a grader, and given the rain encountered, treating the material in any other way would have been, as described by key stakeholders, "disastrous".

GONG PLACES Port Pirie CAUSTRALIA MOOMBA

MOONER Broken Hill Amata Pur Cedum Cedum OMinili Oogmadatta

FOR OVER 30 YEARS' THE MCMAHON GROUP HAS GONE THE DISTANCE.

OUR "CAN-DO" ATTITUDE HAS TAKEN OUR WORK RIGHT ACROSS THE COUNTRY.

ROSSAN

allaros

stern australia

ort Hedland

N T F N B A R



MILL-S above

DEVELOPMENT OF A
NEW STATE-OF-THE-ART
PAPER PRODUCTION
MILL IN BOTANY, NEW
SOUTH WALES, CALLED
FOR DECONSTRUCTION
OF EXISTING REDUNDANT
STRUCTURES.

This extensive project was carried out over an 11 month period, requiring detailed manual and mechanical demolition incorporating the safe removal of 4,000 square metres of bonded asbestos roof and wall sheeting, and 300 lineal metres of friable asbestos pipe insulation.

The team utilised a purpose built aerial works platform for the removal of upper level bonded asbestos sheeting, which was not only successfully audited by Safe Work NSW, but also commended for eliminating the hazard of working on a fragile roof.

Where complete negative air encapsulation was not possible, a "glove bag" removal method was used for the separation of upper level service pipes that were insulated with friable asbestos.

This design allowed for partial decontamination followed by "hot works" separation. The freed pipes were hoisted down, completely encapsulated and then disposed of.

Independent air quality monitoring conducted during asbestos works, showed a constant result of < 0.01 (fibres/ml).

The PC1250 Ultra High Reach was the primary demolition excavator, resulting in a reduced manual workforce. The demolition scope included the Stores Building, Mezzanine Level, Training Rooms, Waste Paper Storage Area, Product Building and DAF Plant.

Utilising metal shears, the team also reduced four external steel silos measuring 10 metres in height down to ground level.

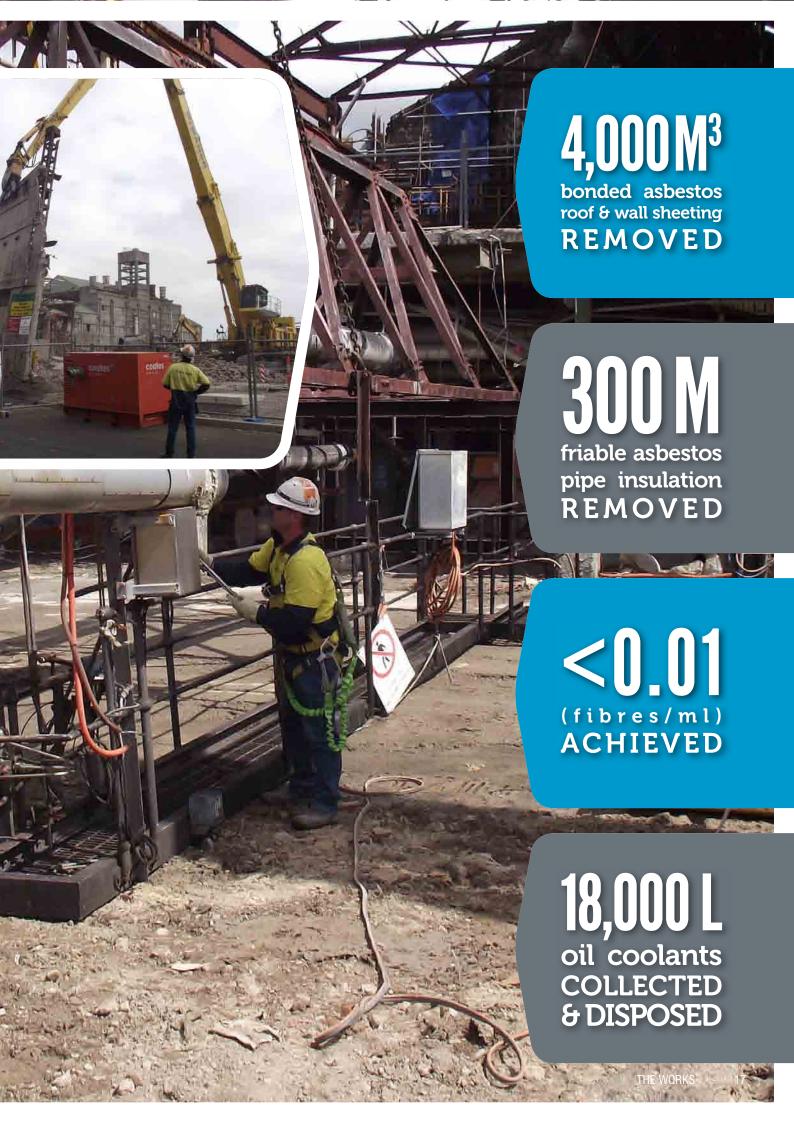
A series of redundant electrical transformers were also recycled for scrap. This involved the collection and recycling of 18,000 litres of oil coolants, and the collection and disposal of 5,000 litres of hazardous oils containing PCBs.

Undertaking high-risk works within a shared environment presented a significant challenge. The daily interface with site staff and other contractors required forward planning and constant liaison.

Audits were conducted on separate occasions by Work Cover NSW & the Federal Safety Commission – each reporting on the project's successful implementation of high level safety systems/standards.









Trades a-hoy at ASC OSBORNE

OFFICE BLOCKS AT THE ASC SITE IN OSBORNE SOUTH AUSTRALIA HAVE UNDERGONE A COMPLETE TRANSFORMATION FROM THE INSIDE, OUT.

The extensive upgrade works called for a team of 30 covering all types of trades including electricians, plumbers, data and communications, workstation installers, painters, tilers, concreters, structural steel fixers, roofers and flooring installers.

The two stage project involved building works to both the Security/Reception Area and Building 15A.

The Reception/Security Area required a major structural and internal refurbishment.

All existing services were demolished before the installation of new toilets, joinery, flooring, electrical, data and communications, fire detection system, ceilings, linings and painting. To finish, sleek black Alucobond cladding was installed to the external walls.

The project team then focused their attention to refurbishing Building 15A, which was split across two floors and was to remain fully operational for ASC staff.

In a systematic approach, the team divided both floors into different stages. Downstairs was broken into two areas, with works including the internal demolition and refit of ceilings, wet areas, flooring, lighting, doors and existing workstations, completed one after the next to minimise disruption.

The upstairs area was then divided into six separate stages, ready for demolition and refurbishment of ceilings, air-conditioner registers and ductworks, electrical, installation of internal Systimax cabling system, new flooring, painting, doors and hardware.

Additional works included demolition of a covered walkway ready for repair and construction of a new bus shelter.



NEW OIL FARM for MINING ISLAND



The project team installed approximately 3,000 metres of stainless steel pipe to connect the new holding facilities to the hose reels, with all fittings welded on site and tested before handover.

LOCATED AROUND 600 KILOMETRES SOUTH-EAST OF DARWIN IS THE ISLAND OF GROOTE EYLANDT MEASURING JUST OVER 2,300 KILOMETRES SQUARE.

Forming part of the Arnhem Land Aboriginal Reserve, this island is home to one of the world's leading manganese assets.

GEMCO, a BHP Billiton subsidiary, operates the large mining activity, extracting high-grade manganese ore using open-cut, strip mining methods and accounting for more than 15% of the world's high grade ore production.

The main workshop within the mine site was earmarked for redevelopment.

As part of the extension, McMahon Services was contracted to install a new oil farm, including two 40ft multicompartment tanks with pumps, a waste oil holding facility, and a service truck refill hose reel station.

The installation of new pipework and hose reels stemmed from one end of the existing operational workshop facility, through to the new extension, and branching out to the new hose reel stations.

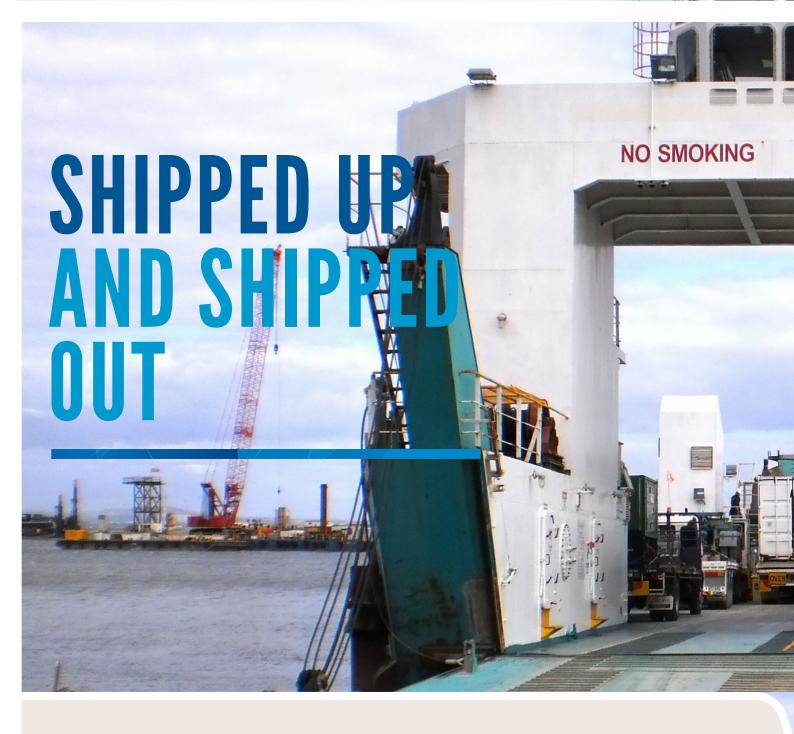
The tanks will contain a range of oils and also coolant ready to service all mine specification machinery on site including, dozers, excavators, dump trucks, graders, road trains and light vehicles.

The project team installed approximately 3,000 metres of stainless steel pipe to connect the new holding facilities to the hose reels, with all fittings welded on site and tested before handover.

McMahon Services also removed an old oil farm facility on site, which involved, flushing and capping of underground lines, removal of several pumps and all associated pipework.

For ten months the crew worked through extreme weather conditions, from humidity to down pours, just one of the key challenges working on this remote island.





Five oversized shipping containers with bonded asbestos sheet lining required cleaning and removal on Curtis Island as part of the QCLNG Project.

The five containers all housed electrical reticulation to run a nearby desalination plant, so the first step was to disconnect all electrical components and relocate the services.

The containers were lifted off their plinths using a 68 tonne container stacker and for more difficult access areas, a 130 tonne crane. Clean containers were set up in line with the contaminated for an easy load out of all the electrical components.

The team had to develop a "clean zone" to ensure no cross contamination would occur by building an encapsulated scaffold between the containers.

The electrical team disconnected all of the components, with some switch boards weighing up to one tonne each. They were then decontaminated, jacked up and put on rollers to go into the clean containers.

Shrink wrapped and then tied down, each container needed a 2500 kilogram ratchet strap. Once the asbestos containers were empty, they were raised onto concrete blocks and completely sealed externally using sheet metal.

Independent air monitoring was conducted throughout the whole process, with the project team recording zero safety incidents.

The containers were then loaded onto barges and sent to the mainland, headed for Brisbane.

ZERO SAFETY INCIDENTS RECORDED





ON THE WESTERN FRONT

1 4 0
CONCRETE STEPS
500 kg each
CUT & REMOVED

100% recycled outcome

Our work at Adelaide Oval was not quite done. The demolition team was contracted again to come in and complete high risk demolition works, this time at the Western Grandstand.

Part of this job was to cut and remove 140 concrete steps weighing up to 500 kilograms each.

A simple enough job in theory, but with the Grandstand roof shaped in a curve and the floor beneath unable to withstand much weight, the project team had to think strategically.

Engaging Aztec Analysis, McMahon Services helped to design two custom gantries. Built in our fabrication workshop at Dry Creek, the team tested the gantries several times to get the structure just right.

Working up to five storeys high, the steps were cut and then suspended using the gantries, with McMahon Services working closely alongside BK Innovative Concrete Services. A 45 tonne Tadano crane was then positioned at the highest peak of the roof, ready to lift the steps into bins positioned below.

The team completed the project in just 12 days, six days ahead of schedule, with no incidents or injuries. The project also achieved an incredible 100% recycled outcome.



In 1990, The Australian Submarine Corporation constructed the Synchronised Shiplift for the single purpose of manoeuvring a submarine into and out of the Port River at ASC North.

Over time, the corrosion protection broke down causing damage to the structural members. To extend the life of the shiplift, McMahon Services was contracted to restore the structure and recoat the structural steel.

Risk assessment was critical in this project. The challenge was working at heights and over water with limited space, whilst ensuring protection of the river. A key handover condition was 'zero pollution' entering the water below.

The work area was positioned above and below the shiplift – a jetty-like structure with a rail line where the submarine travels along, before the structure is submersed into the water.

Drop deck scaffolding was constructed across the jetty. A suspended floor was then installed and a debris net underneath for additional protection.

The area was then encapsulated, with extended plastic to reach above head height.

The project team could then conduct abrasive blasting to the corroded beams and replace structural steel where required, before spray painting.

The team worked in a leapfrog sequence, working in sections down the jetty. Timber

decking was removed for access below and then reinstated or replaced once the section was completed.

With tides rising above the working level, the project team had to monitor and time the tide movements daily. The work area was vacuumed and mopped before the encapsulating plastic was rolled up to eliminate water from entering the zone.

Working along the exposed jetty structure, all personnel were harnessed and a retrieval boat on standby for emergency response. The South Australian EPA endorsed our work methods and environmental management planning.

A true balancing act, the project team successfully restored the shiplift ready for reuse.





DIGGING DEEP for real opportunities

Intract's General Manager, John Briggs, often speaks about his simple business model – 'Train on the job. Stay on the job'.

Delivering on Indigenous training and development is important, but McMahon Services and Intract see stable employment as the key focus – there is no point in training just for training's sake.

Since its launch back in 2010, Intract has secured employment for over 24 Indigenous workers.

In an unprecedented decision, Intract also recently secured the civil works package for Santos at the \$100 million Mereenie Oil and Gas Fields project.

A team of nine, along with four local Aboriginal men also employed by Intract, mobilised to the remote site located in the Amadeus Basin, approximately 300 kilometres southwest of Alice Springs.

Intract was contracted to construct eight lease pads for new drill rigs and upgrade approximately 40 kilometres of roads for better access to the site.

For Santos, the project was not just about capital and energy growth, it was also about giving Aboriginal people a stakehold in the investment and improving Indigenous communities.

Working on site since March Intract has become a true inspiration. The project team was proud to be working on the land, gaining tickets to operate heavy equipment, earning money to support their families, and ultimately encouraging the younger generations to follow in their footsteps.

Investing in over \$6 million of plant and equipment on this project alone, and continuing to form new relationships with key community groups, McMahon Services is firmly committed to the growth of Intract.

The vision for Intract has well and truly come to life. Stemming from a long history of working with Aboriginal communities, McMahon Services was determined to create real opportunities that would create real change for Indigenous people.

Meaningful employment was the ultimate goal. Intract has not only achieved this through the development of a steady labour force, but has also extended opportunities to local Aboriginal people in communities where they work.

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