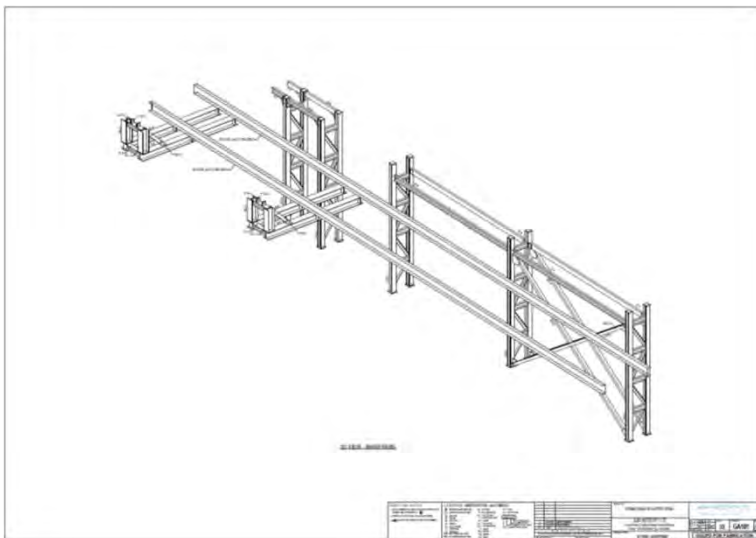
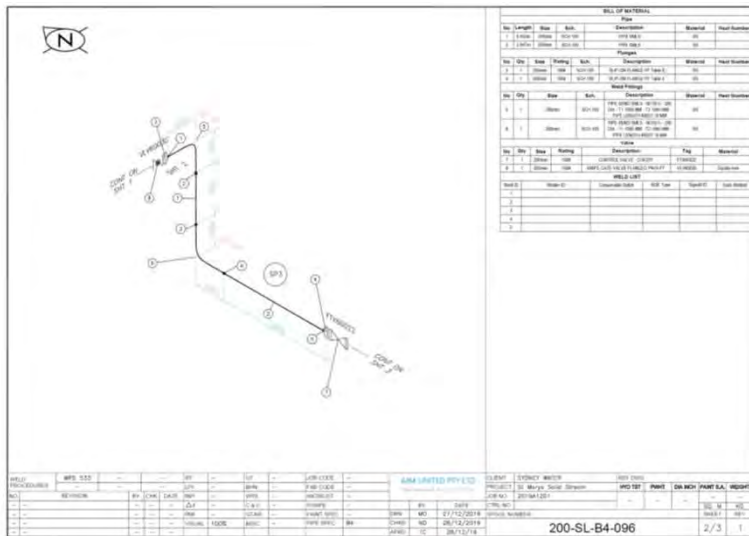


# Water Infrastructure





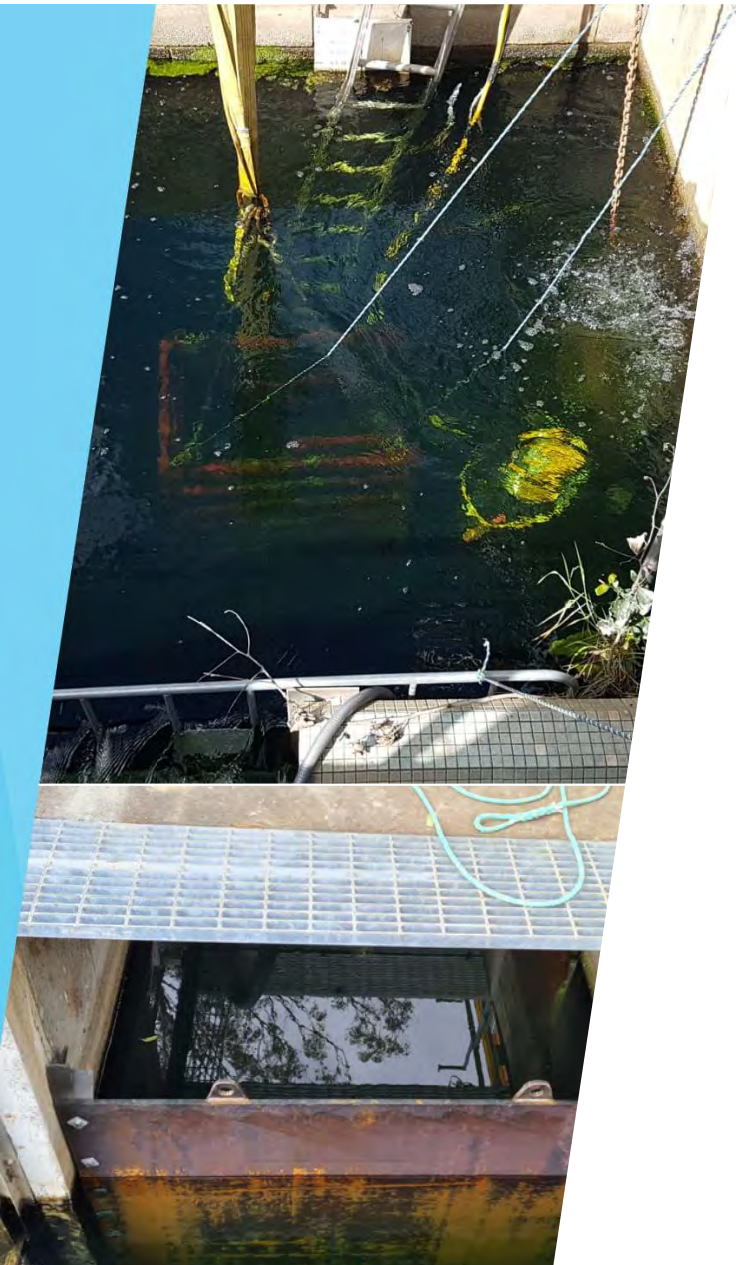
## AJM Shop Detail & Isometrics Drawings Dept.

- ▶ Our most previous project AJM United had a dedicated drawing team who had the responsibility of producing drawings and isometrics.
- ▶ It was a challenging task as we only had the BIM model and GA engineering drawings as reference. Our Detailers use the latest drawings software to ensure accuracy in details. One of the main factors to our project success is drawing control, we say if the job starts well it tends to finish successful.
- ▶ Some projects required AJM to use its surveyors, engineers and tradesmen to site measure and sketch, and all collectively agree on the most efficient way to build. All factors of the build are considered in the drawing stage of the project.



## MPM Digester Tanks Overhaul

- ▶ Digester tank overhauls are never simple, Highly complex and high risk works, AJM delivered with zero LTI and a high quality finish product in accordance with SW Mechanical Standard Version 9.0.
- ▶ The project included a complete overhaul of the assets, involving high pressure cleaning of tanks using a manbox process, supply, isometric development, fabrication & installation of new piping & supports in 316SS, Concrete coring into tank to install paddle flanges in 316SS.
- ▶ Installation of all mechanical components including digested gas lines, overflow piping, design and manufacture of drainage sink in 316SS.
- ▶ Protective coating of membrane in strict accordance with WSA201



## Divers for Isolation of Assets

Part of AJM United Scope of Works is to isolate and dewater to allow for works to be completed safely and or the adjoining asset remains online.

When divers are required for isolation that means that the asset cannot be put offline under any circumstances.

AJM United prepared a detailed methodology and engaged the services of Sydney Water approved divers to complete the isolation works as per the detailed methodology.

# Shutdown - Major Works

One of the most challenging shutdowns, 6 months of planning and site pre-works, preparation of detailed construction methodology with picture diagrams, detailed lift studies for the mobilisation of 200t tonne cranes and dual lifting. This project was mentioned by the SW project director as a great milestone of the project, which was completed on time and with ZERO injuries and incidents.



- ▶ AJM were mentioned as one of the main contributors to the success of this two week shutdown. This project consisted of the removal of the four Archimedean Screw Pumps weighting 25ton each, inclusive of RE pipework, lube oil feed pipework, drives and associated gearboxes, the access platforms, inclusive of stairs, existing handrailing and grating from all existing channels, Flygt Submersible Pumps inclusive of piping, handrailing ducks foot, guide rails, lifting chain and all other associated equipment. It also included minor civil works and remediation as per SW Civil specification.
- ▶ The installation works consisted of four Tertiary Effluent Pumps, inclusive of ducks foot, guide rails, lifting chains and discharge 750nb pipework and interconnecting lines, including HDG pipe supports, five Archimedean Screw Pump Opening SS316 blanking plates & Overflow Openings SS316 blanking plates, stop boards, racks, valves, inline equipment as detailed in the SOW.

# Shutdown - Confined Spaces

- ▶ AJM United have completed many confined space works involving vital preplanning and prework to allow for the activities to be conducted safely, at Riverstone WWTP AJM were contracted to complete bulkhead fit out in the tertiary filter outlet channel, this required isolation and dewatering using two 6 inch pumps to empty the channel to allow for AJM to complete the Scope within the windows provided by the plant. The entry through man-box inside the channel manway.





## MPM Primary Sedimentation Tanks Overhauls

- ▶ Over the years AJM United have developed new ways to completing the works on schedule and without hinderance to the plant and its operation. We woprk closely with our client to ensure that all parties are happy throughout all stages of the project.
- ▶ Our most recent PST included a complete overhaul, removal of the old steel components and installation of the new polychem system;
- ▶ Supply & fabrication of new launders, 316SS scum canoes with the injection of an updated motorised system, DICL and SS316 piping and other steel and mechanical attachments, including RE lines and sprays and pipe works and connections in the gallery.
- ▶ AJM had a tight deadline of 6 weeks to complete each PST; collectively with UGL and Sydney Water plant team AJM delivered the project on time and within budget.

# Chlorine Contact Tank Projects

- ▶ Working on existing asset, SOW Included the installation of mixers, stop boards, modification of structural blockwork which included the use of divers to install blocking plates, Weir plates, installation of Hydrochloride dosing tanks, and double containment lines for various dosing lines inc. Sodium Bisulphate & Sodium Hydroxide lines, also in 316SS compresses air lines in press fitting materials, RE lines in ABS & UPVC.
- ▶ All supplied steel and piping was fabricated in AJM manufacturing workshop located in Parramatta.
- ▶ This scope of works were challenging in more way than one, the construction methodology was key to the success of the project as the plant could not afford to shutdown and drain the tank, it required the installation of seal plate on the wet side using experienced divers. This allowed for works to be completed in the dry side without causing hindrance to the plant operation. All the existing infrastructure had to be remediated and or made good before handover to the plant for wet commissioning.





# Chemical Systems

## Ferrous Chloride

- ▶ AJM have completed work on Ferrous chloride plants for SW, the SOW included working on existing assets, and required the upgrade to new like for like, it involved the removal and disposal of two ferrous chloride tanks, all existing inter connecting pipework, valves instrumentations and associated equipment such as dosing skids.
- ▶ Installation of two new ferrous chloride tanks, ferrous dosing skids, strainers And other equipment's, safety showers, FRP walkways, double containment piping for ferrous chloride in UPVC and PE Electrofusion. All piping was painted and labelled as per SW technical specification.
- ▶ Both the removal and installation task was difficult for several reasons, one being the size of the FRP tanks and second was the access platform on the roof of the tank that was required to be retained. Detailed planning was essential, coordinating and preparation of lift studies, with SMART engineering allowed AJM United to complete the works safely and without comprise of SW existing infrastructure and assets.
- ▶ All supplied steel, FRP and piping was fabricated in AJM manufacturing workshop located in Parramatta.



# Chemical Systems

## Sodium Hydroxide



- ▶ Working with chemical systems is always high risk and challenging, on this project AJM United had to plan to detail, ensuring that the existing assets are not disturb eliminating or reducing to very unlikely any possibility of hindrance to the plant and or Sodium Hydroxide plantation. The works included decommissioning, removal and disposal of old and installation of new dosing skids and tanks, steel supports, double containment piping in UPVC materials, valve and all inline equipment.

# Chemical Systems

## Sodium Hypochlorite



Isolation, Decommissioning, removal offsite and safe & good 4 off Existing Sodium Hypochlorite dosing pumps, and associated piping, valves and inline equipment and replacement with new like for like commissioning and handover to SW. All piping was double containment PE electrofusion. AJM United have electro fusion welding machines and experienced trained, ticketed welders.

All chemical piping as per SW mechanical specification shall be painted as per the colour code chart and labelled. AJM have a proven track record working on chemical systems, we have established system to ensure all works are completed safely and to high quality standards with full traceability submitted to the client at the end of the project.

# Chemical Systems

## Sodium Bisulphite



- ▶ Another part of the site where old assets had to be replaced with new. Removal and disposal of old assets and installation of new equipment, piping and structural supports. All works were commissioned and handed over the SW for commissioning. This project required works to be completed on schedule to not jeopardise the overall operation of the process, all started task had to be finished on time, preplanning and coordination was the key to success. Another job well done by AJM United Site team at St Marys WRP.

# Polymer Dosing Plants

AJM United have been have completed construction of several polymer dosing plants for Sydney Water, this included structural installation of access stairs, FRP flooring and platforms, Installation of piping 316SS, UPVC, ABS, including double containment systems. The SOW work included installation feed hoppers, tanks, mixers, pumps and all other inline equipment & valves. AJM completed commissioning of the assets and handover to the client with all QA MDR documentation.

All supplied structural steel and 316SS piping was drawn by AJM Isometric draftsmen, supplied, fabricated and welded at AJM manufacturing facility at Parramatta.





## MPM Clarifier Tank Overhauls

- ▶AJM United have successfully completed Clarifier tank overhauls on multiple sites for Sydney Water with no Lost Time Injuries and a great standard of workmanship.
- ▶The scope of works are vast and included removing excessively corroded parts and replacing “like 4 like” in 316SS and or completing welding repairs to heavily corroded sections of the asset. Replacement of mechanical items such as slip ring, bearings, drive gear box, seals, motors, and establishment of grease lines. Changeout of weir plates, pipe works including RE spray system in 316SS, scum boxes and baffle plates.
- ▶Our most recent clarifier AJM set the benchmark commissioning the asset within the estimated timeline which meant for Sydney Water that they were able to have the asset in service quicker than anticipated.

## Penstock Maintenance & Overhauls Inc. Design & Construct

- ▶ AJM United have completed many penstocks overhauls and replacements for Sydney Water. The scope of works have included design and construct, removal of old and installation of new, including the injection of actuated operation of the penstock from the old fashioned hand operation.
- ▶ Our latest project included four large penstock for the THP hoppers at St Marys STP. It included the design, manufacture and Installation of Knife gate valve and feed chute hoppers, materials 316SS for the Penstock frame and gate and Aluminium body Actuator. The design was not your typical vertical operation, these penstocks have to operate horizontally and also ensure the meet the leakage rate of xxx litres / min



# Water Supply Pipeline Maintenance Works

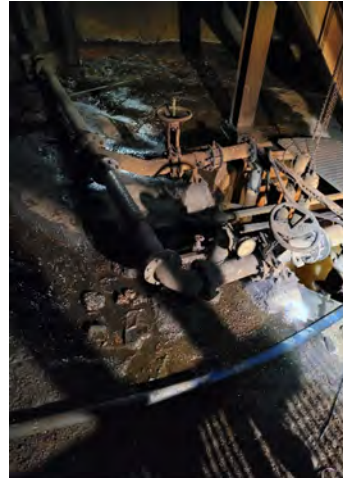
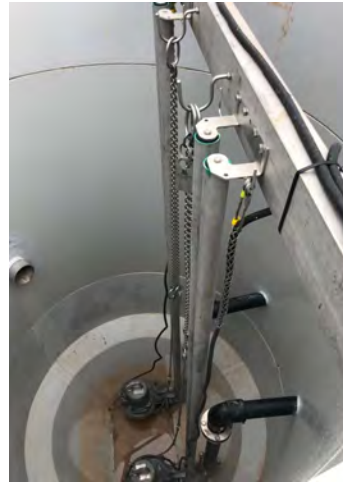
- ▶ Working on water supply pipelines is always high risk, particularly when operating with plant and equipment where the potential of damage to the pipeline is increased.
- ▶ Prior to conducting any works on water supply pipelines AJM conducts a detailed review of the scope of works, analyzing the different method of construction to ensure the safest processes of operation are selected and established to ensure the risk of damage to the water supply pipelines is eliminated and or highly unlikely.
- ▶ In the past three years working with Sydney Water on various sites AJM United achieved a Zero environmental and property damage incident.





# MPM Pump Station Overhauls

- ▶ AJM United have completed many Overhaul of Pump Stations including confined spaces; The scope of works varied and included service, refurbishment and or replacement of new asset, removal and installation;
- ▶ Supply of new pipe works "Like for Like" in 316SS, DICI and or ABS/ PE Plastic Materials.
- ▶ Manufacturing and machining of new couplings, pins, bolts, "like for like".
- ▶ Commissioning and Handover of asset to Sydney Water.



# MPM Pump Laser Coupling Alignments

Laser Alignment using Hamer laser shaft alignment system with the typical reporting layout; the main purpose of this alignment was to get it operating at a high efficiency rate.

STEALTH SERIES™		COUPLE6 ALIGNMENT REPORT		Hamer	
<b>REPORT ISSUED BY:</b> AJM United Pty Ltd 5 Junction Street, Auburn, NSW, 2144 Tel: (02) 9748 0444 Mob: 0410 668 159 Email: mahmoud@ajmunited.com.au					
<b>COMPANY / JOB INFORMATION</b>					
Machine Name	WP184B - U09 PUMP & MOTOR SET				
Company Name	Sydney Water				
Location	Prospect WP184B				
Address					
City	PROSPECT				
State	NSW				
Postal Code(ZIP)					
Country					
Notes	Alignment check as requested by SWC based on recent Hatch report				
<b>MACHINE SETUP</b>					
					
UNITS      OFFSET = mm, ANGLE = mm/100mm					
<b>TARGET INFORMATION</b>					
MODEL NUMBER : T-1250		Serial Number : 80-00243			
Calib. Due : 6/14/2019		FW REV. : 1.027			



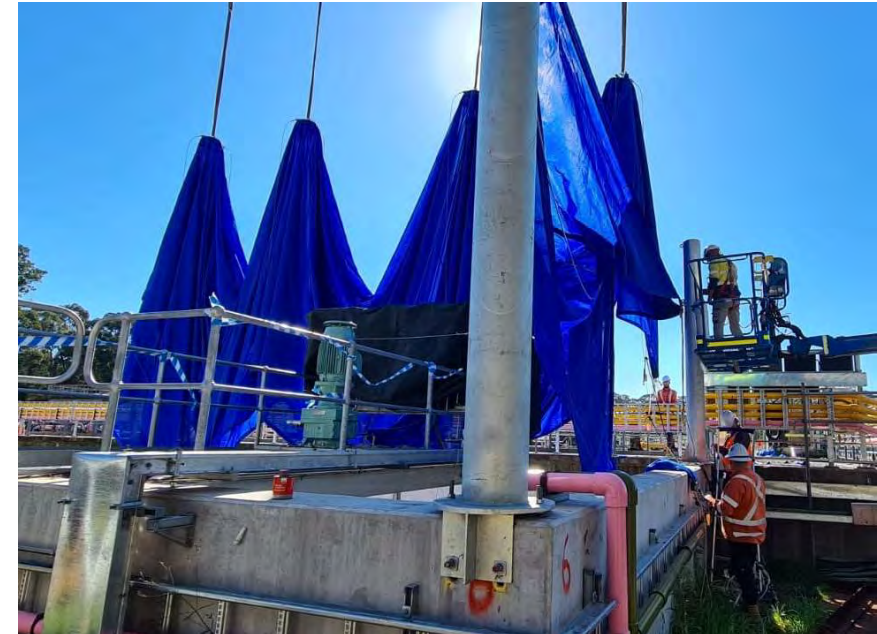
# Bridge Refurbishment

- ▶ AJM recently completed a bridge refurbishment on the Wonnara pipeline in the national park. Access to the site was not easy, the scope of works included civil, drawing development, manufacturing, protective coatings, removal of old and installation of new.
- ▶ The site access presented a few challenges, flowing water and surrounding fauna and flora, each task had to be precisely planned and conducted. AJM prepared a Safe work method statement and Impacts assessment with stringent controls to ensure the environment was preserved and not harmed.



# CCT Sail Shade Design, Construct & Install

- ▶ AJM United have completed design, construct & Install of a sail shade for Riverstone WWTP and St Marys WRP for Sydney Water on the Chlorine Contact Tanks.
- ▶ The Challenge was to design a shade that was one piece spanning from one end to the other end of the CCT. All aspects of the process had to be considered when designing the Shades, which included choosing the correct size crane, access, and method of Installation.
- ▶ The projects were successfully completed with no accidents or injuries.





## Wet Well Maintenance Projects

- ▶ Wet Well jobs are not the best conditions, it includes working to tight deadlines, and requires pre-shut preparation to ensure tasks are completed as planned and without failure. This sometimes requires having a plan c, d & e;
- ▶ when working on wet wells you always have to expect the unexpected. Our latest wet well projects included using 2 x 6" suction pumps to remove Approx 30,000 litres of raw water, it included working with the plant to install isolations to stop the flow, and allow AJM to perform the works within the confined space safely.

# Dry Well Maintenance Projects

- ▶ Over the past three years AJM United has been part of dry well maintenance projects and upgrades; many have included scheduled shutdowns, the environment may not be as complex when working in wet well conditions, however the risk of not delivering on time can mean that the SW customers will be without the essential service. “Failure is not an option”.
- ▶ On our most previous dry well assignment AJM worked with Sydney Water and devised a methodology to ensure that the works were completed within the required time frame provided and without compromise to the SW assets and stakeholders.



## Fans, Louvers, Ductwork & Damper Maintenance

AJM have completed replacement works of Louvres, fans, ducts and dampers at several SW sites, this includes Isolation, disconnection, removal of old assets, prepare drawings, apply design changes, manufacture and installation of new “like for like”....

These jobs are sometimes in constricted environments and require proper planning in the manufacturing stage to ensure you can transfer the items to the install area.



# Safety Works

## Corroded Asset Replacements

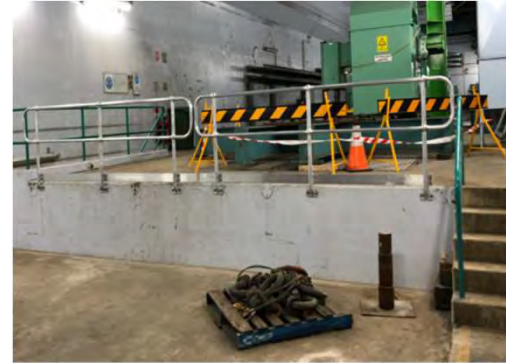
- ▶ AJM United have been part of the Sydney water safety improvement projects, we have worked together with several project coordinators to complete complex safety projects, our most complex, Bellambi Corroded Assets included replacement of all the old cable trays and supports; The challenge was to replace the Cable Trays insitu with no need of moving or disconnecting cables.
- ▶ AJM team of engineers with SW devised a methodology which required a design of temporary support jacking system to allow for this process; the procedure wasn't as quick but was safe and reduced the risk to the plant.





# Safety Works Plant Asset

- ▶ AJM United have completed multiple safety works on various sites, the safety works include completed refurbishments, replacing and or removing unused assets and or infrastructure. The purpose of the safety works is to, make an unsafe environment safe for all, and make sure all repairs & replacements comply with the relevant Australian standard(s) and WHS Acts & Legislation.



## Inline Equipment Routine Maintenance

▶ Sydney Water Corporation; 2 off 650mm Diameter Penstock Valves not opening;

▶ AJM United was called out to identify the problem by means of process of elimination. The works involved working in confined space and required double isolations.

