

## COMPLETED PROJECT

<b>SITE:</b>	<b>Talison Lithium</b>
<b>LOCATION:</b>	<b>GREENBUSHES WA 6254</b>
<b>SCOPE OF WORK:</b>	Fire Protection
<b>COMPLETION DATE:</b>	August 2019

*The Talison Lithium Australia Pty Ltd (Talison) mines and processes the lithium bearing mineral spodumene at its Greenbushes operation in the south west of Western Australia to produce a range of Technical Grade and Chemical Grade lithium.*

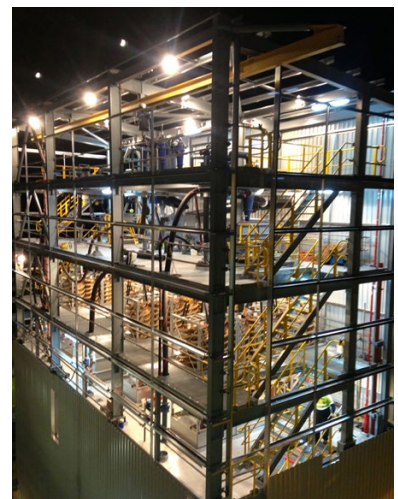


The Chemical Grade Plant 1 (CGP1) is now operating above nameplate capacity and no further significant increase in production is possible due to restraints of the capacity of the existing crushing facilities and hence the the construction of a new plant known as Chemical Grade Plant 2 (CGP2).

MSP Engineering Pty Ltd were awarded the contract to complete the engineering, procurement and construction of a new standalone Chemical Grade Plant (CGP2) including a crushing plant at the Tailison's Greenbushes Operation, WA and Firesafe was engaged to provide the Fire Protection Services for this contract.

The new plant involves Fire Protection to the following:

- Crushing and Screening Circuit including the Primary & Secondary crushes and screening, High Pressure grinding roller & Stockpile and Reclaiming Vaults.
- CGP2 Processing Plant inclusive of HMS, WHIMS, Classification & gravity separation, Filtration, Floatation, Thickeners & Reagents processes.
- Non Process Buildings incorporating the amenities building, maintenance workshop, mill ball & FeSi storage building, sample preparation building and the bulk reagents storage building



# COMPLETED PROJECT

## SCOPE DETAILS

Within our scope, we were tasked with the design, manufacture, assembly, supply, surface protection, quality assurance, testing and commissioning including all required installation and support resources of the following:

- Fully compliant Automatic Sprinkler systems (6) in accordance with AS2118.1 (1999) and FM Global requirements across the plant.
- Fire Pump Set and Fire Water Storage Tank to AS2941 and FM Global requirements.
- Design of the fire water underground ring main and stand pipe system to AS2941 and FM Global requirements.
- Fully compliant Deluge systems (13) in accordance with AS2118 and FM Global requirements across the plant.
- Fire Water Monitors on specific Conveyors above 20 metres in height and strategically placed across the site to FM Global requirements.
- Fire Hydrants and Hose Reels throughout the Process Building.
- Fire Extinguishers across the site.
- Fire Detection and Alarm System in accordance with AS1670.1
- Building Occupant Warning System in accordance with AS1670.4



The Fire Sprinkler systems were installed specifically to cover:

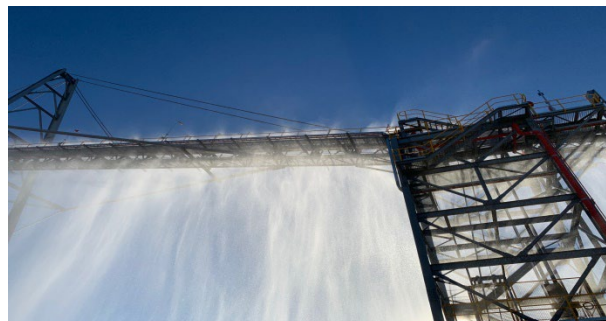
- The belt conveyor
- Spirals
- Hydraulic power pack and lube equipment
- Dewatering screens

The Deluge systems were installed specifically to cover:

- Conveyors (located inside the buildings)
- Horizontal Belt Filters
- Shaker Tables
- Screens



The Fire Water Monitors were installed specifically to cover nominated conveyors in excess of 20 metres in height across the site.



The Fire Hydrants and Fire Hose Reels were installed on each level of the processing plant and across the site compliant with the applicable standards.

## COMPLETED PROJECT

---

The Fire Detection & Occupant Warning system was installed to cover:

- An addressable AMPAC Analogue Fire Control Panel equipped with suitable SMOF fibre interface network card was installed for interfacing to the site wide network. A total of 9 x AMPAC Fire Control Panels have been installed with an additional one installed specifically for the Oleic Acid Plant area. The fire control panels are fully autonomous, able to work independently, however these are all connected to a single mode fibre optic network to form part of a fully networked system.
- The main plant control room is protected with a smoke detection system and heat detection compliant with AS1670.1.
- As part of the Dry Fire installation we linked, the fire sprinkler system, control valves and deluge systems located on the main CGB2 to one of the fire control panels.
- Suitable Occupant Warning sounders and beacons have been installed adjacent to the main control room entrance. Also suitable sounder beacon units have been installed on the main CGB2 plant area. The fire alarm sounders are supplemented with beacons on the plant.



## CHALLENGES & SOLUTIONS

Throughout the project we were faced with various challenges:

- Continual utilisation of large boom lifts to gain access to areas of installation at high levels
- Follow safe working methods for works being carried out on Conveyors exceeding 20 metres in height
- We had to be precise with our co-ordination and timely delivery of materials to site to meet construction timelines and maintaining work front continuity.
- Firesafe had to meet strict requirements of surface treatments due to the corrosive nature of the plant operation. All pipe and fittings had to be painted in accordance to the Talison specification.

