

Case Study:

Successful Refurbishment of 13 Year Old Chamber

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MineARC's Refuge Chamber Refurbishment Program transforms damaged, worn or second-hand chambers into fully functioning, certified refuge chambers that look as good as new. In the first half of 2017, MineARC successfully refurbished 26 chambers. One of which, was thirteen year old chamber MA-80 from Gold Fields St Ives, a gold mine located 20km south-east of Kambalda, Western Australia.

Following a refuge chamber audit conducted on site, the Series II 12-Person HRM (the original Standard Design) Refuge Chamber with a free-pour chemical scrubbing system was returned to MineARC Australia's manufacturing facility in Perth where it underwent a complete transformation by MineARC's qualified workshop technicians.

With there being a chance that the refuge chamber had incurred structural damage from years of sitting in the harsh underground environment, MineARC's engineers first performed a comprehensive assessment of the structural integrity of the chamber in order to ascertain what would require full re-fabrication or just repair. After being stripped completely of its internal components, batteries and air conditioning unit, MA-80's battery box was refabricated and the entire exterior and interior of the chamber was then blasted with a new coat of high durability white paint. This paint aids in underground visibility, provides protection against corrosion and complies with AS/NZS 2312:2002.

The chamber was also upgraded to include MineARC's **Compressed Air Management System (CAMS)**. CAMS offers a number of features aimed at reducing running costs and improving operational safety during an emergency. Aside from providing clean breathable air through a superior four-phase filtration process, CAMS optimises mine air usage resulting in considerably reduced operational costs. Other features include guarantee against over pressurisation of the refuge chamber, gas toxicity monitoring, flood protection valves for automatic mine air shut off in the event of water ingress, and an efficient filter change-out process that reduces service time.



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Internally, MA-80's Series II Scrubbing System was upgraded to a [Series IV Scrubbing & Control System](#) with Aura-FX Digital Fixed Gas Monitoring and pre-packaged MARCISORB Chemical Cartridges for superior scrubbing capacity. The Series IV unit plays host to an intuitive digital controller interface to manage and monitor all chamber power and lighting, motion sensor logging, and an intelligent voice audio navigation (iVAN) system to guide occupants through operational procedures. MineARC's [Aura-FX Digital Gas Monitoring System](#) features dedicated, reliable sensors, and has the ability to individually monitor up to eleven gases via a series of user-friendly, digital screens. The system includes audible voice alarms which will prompt occupants to replace scrubbing chemicals or adjust oxygen supply levels into the refuge chamber as required, reducing the risk of human error during an emergency.

Also included in MA-80 was a new air conditioning unit, a transformer, brand new external and internal stickers and the latest operating manuals. Following the refurbishment, a comprehensive 50-Point Safety Audit was conducted to ensure the chamber is certified and meets MineARC's stringent safety standards and those of the industry.

The MineARC Refuge Chamber Refurbishment Program is available to MineARC and non-MineARC Refuge Chambers alike, thus converting your non-MineARC chambers into a fully functioning part of your MineARC fleet.

For further information regarding MineARC's [Refuge Chamber Refurbishment Program](#), please email info@minearc.com.au

