



Macarthur Coal Case Study

Macarthur Coal is one of Australia's leading independent producers of coal for use in the production of steel and is a key supplier of low volatile PCI coal to the steel mills of Asia, Europe and Brazil. In the process of expanding operations the need arose for Macarthur Coal to install both internet and telephone communication services for company staff and two separate groups of subcontractor's.

Objective:

To install a new repeated, MV122 100Mbps plus 4 x E1 licensed frequency link from Moorvale Mine site to Coppabella Mine.

The new mine site, Moorvale, was established approximately 15km south west of the existing Coppabella Mine which is situated approximately 140km south west of Mackay. Macarthur Coal's plan was to expand the existing services at Coppabella to Moorvale which would allow routing of all data and telephone calls through Coppabella and negate the requirement for a separate system at Moorvale.

Macarthur Coal had two options to achieve the infrastructure goals. The first option was to install a fibre optic cable at a cost of approximately \$350K. The second option was to install a high-speed wireless system at considerably less cost however, a system of this nature requires clear line of site between the two locations and unfortunately, this was not the case.

In order to overcome this obstacle, Wave1 suggested that an intermediate site that had clear line of sight to both sites be used as a repeater. This option meant that two back-to-back microwave systems were required which would double the supply, installation and license fee costs but which would still be a far lower cost than installing fibre optic cable. Wave1's wireless option has given Macarthur Coal greater flexibility, including the ability to relocate the system in years to come if requirements change and to expand the communications network for future projects in the area. Wave1 installed large towers which gave Macarthur Coal the option to add other systems as required.

In examining which was the best choice for its needs, Macarthur Coal considered the reliability of fibre optic cable and had concerns including:

- Back-hoe attenuation. A fibre run in this location would cross a number of property boundaries and the potential for damage to the cable would be high.
- Obtaining the required approvals to dig and install a fibre optic cable over this distance would be an issue and could potentially be a long, drawn-out process.





Technical requirements:

The system had to accommodate Macarthur Coal's voice and data services from Coppabella to Moorvale and had to support VOIP, E1 interfaces and Fast Ethernet.

The system had to accommodate two separate subcontractor's needs with both voice and data links from Coppabella to Moorvale in the form of a separate "on ramp 10 service " via its own E1 channel.

Wave1's high-powered, high-quality solution gave Macarthur Coal 100Mbps Fast Ethernet and 4 X E1 services. Separate data services were achieved using VLANs. Both the subcontractor's installed their own PABX and could be billed individually by their carrier.



Moorvale Mast & Antenna



Repeater site with
2 x Macarthur Coal antennas

