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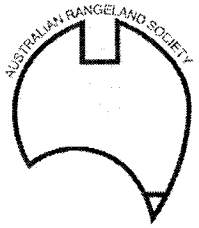

The Australian Rangeland Society

MINIMISING ENVIRONMENTAL DAMAGE DURING MAJOR INFRASTRUCTURE DEVELOPMENTS

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In 1996, WMC Limited constructed a 600 mm diameter buried pipeline over a distance of 110 km to connect a new borefield to its existing pipeline system (Figure 1). Detailed heritage and environmental surveys began in 1992. A public meeting was held in Marree to discuss this work with townspeople well before construction began. Other meetings were held with Aboriginal groups and with local pastoralists. A full-time environmental officer was appointed to the project and he worked closely with the WMC Project Engineer in handling environmental, heritage and community issues.

The route was selected to avoid, as far as possible, heritage sites and environmentally sensitive areas. Sites close to or on the route were identified and flagged. Special conditions were placed on access to and for construction work in these areas. A partnering workshop was held with senior representatives of all major contractors and WMC prior to any ground disturbance. The environmental and heritage responsibilities of all parties were fully explained. An environmental code of practice (ECOP) was prepared that identified issues and amelioration measures. This was issued to and signed by all project workers at their induction, with non-compliance potentially leading to dismissal. The partnering workshop brought sensitive environmental and cultural issues to the attention of all contractors and this was instrumental in gaining acceptance of the ECOP amongst the workforce.

The nominal width of the construction corridor was set at 22 m, which included an access track, pipe lay-down and handling areas, the trench and a spoil storage area, and was wide enough to allow the use of a bucket-wheel trenching machine. All variations to this width required a written clearance signed by the environmental officer, who was available to negotiate any special conditions and sign the clearance within 24 hours. In practice, several sets of conditions were identified that required departure from the standard corridor width. The most common of these was on sand dunes where, because of a maximum allowable deflection of one degree at each join, extra width was required for storing spoil. Once the type of variation was identified, issue of the clearance was a simple matter and its conditions were clearly understood by both parties. Construction was carried out in a corridor as narrow as seven metres in highly sensitive areas, where pipe was stored at the ends of the restriction and trenching was done with an excavator. Construction through two wooded creeks was achieved without the removal of any trees, although it was necessary to lop a few branches to allow passage of the excavator. It was not necessary to clear all vegetation from the pipe handling area and this resulted in faster regeneration of this part of the corridor.

Areas were designated for the construction of borrow pits and for the turn-around of pipe delivery trucks. These were the only areas where driving outside the construction corridor was permitted. They were generally on gibber plains, in areas with minimal vegetation that were relatively easy to rehabilitate. There were very few cases of people driving outside the designated areas, with almost all digressions by visitors rather than by construction workers.

The environmental officer visited all work areas at least twice each week. This frequency increased during construction in sensitive areas and during rehabilitation. There was regular liaison with pastoralists and local interest groups, including Aboriginal groups.

All backfilling of the trench was carried out from within the designated corridor. Where a large amount of sand had been stockpiled and there was no room to operate machinery behind it, this was dragged back into the trench using an excavator, rather than pushed in with a bulldozer. All remaining rocks from the trench greater than 150 mm diameter were picked up and buried in designated borrow pits prior to their rehabilitation. The construction corridor was lightly ripped as the final stage of rehabilitation and suitable drains were constructed to protect steep slopes from water

sion. A windrow left over the trench to allow for subsidence, an engineering requirement, was ken at 100 m intervals and at all natural watercourses. The only place where erosion did occur, lowing rainfall of 170 mm in a week about four months after completion, was on the gentle slopes the gibber plains. During construction of the second stage of the pipeline in 1998, the windrow s broken each 50 m and final ripping was in a figure eight pattern. This was successful in venting water erosion in all areas.

e Olympic Dam Expansion Project also included construction of a new 275 kV power line from t Augusta (Figure 1). Much of the route was through western myall (*Acacia papyrocarpa*), white ress pine (*Callitris glaucophylla*) and mulga (*Acacia aneura*) woodland. The same approach was d with the construction workforce: a partnering workshop with senior personnel, use of a new OP and induction of all workers. Guyed towers were used to carry the conductors, resulting in a aller footprint and less disturbance at each tower site. Where possible, these were placed in odland clearings. Use of a helicopter to string conductors between towers eliminated the need to ar a corridor through the trees. This resulted in the retention of 3600 mature trees that would have n removed if more conventional methods had been used. Low shrubland vegetation on the plains s driven over rather than cleared. This resulted in faster revegetation of these areas from existing tstock, with bladder saltbush (*Atriplex vesicaria*) observed fruiting on previously flattened bushes months after the end of construction.

gular independent environmental audits carried out during construction found no major ringements of the ECOP. Workers became very protective of the environment and proud of their ievements, resulting in this project winning two industry environmental awards. The good ironmental outcome of these projects was largely due to forward planning, careful route selection l getting an informed workforce sympathetic to environmental and heritage problems before any ground work began. The role of the environmental supervisor then became one of support and ice, rather than an enforcer.

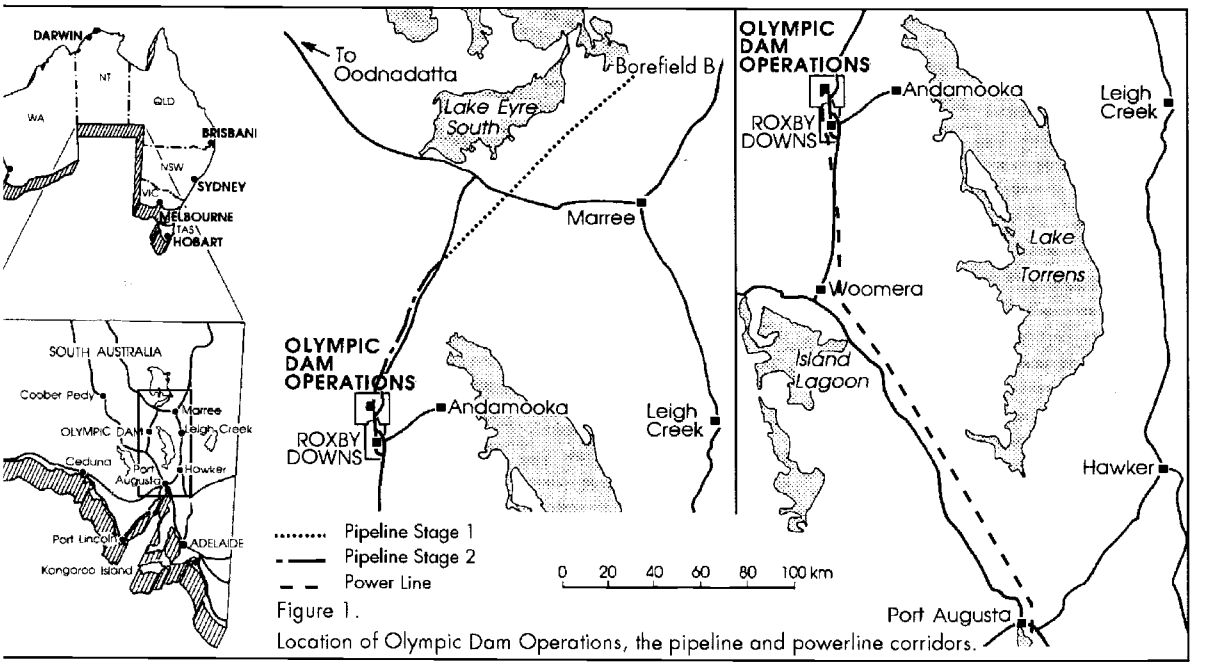

Figure 1.
Location of Olympic Dam Operations, the pipeline and powerline corridors.