15.1 Existing conditions

Fire has been used by Aboriginal people for tens of thousands of years and has become an integral part of the ecological fabric of the Top End landscape (Williams *et al.* 2002). Burning is an important land management tool for Tiwi residents, for both historical and contemporary reasons (TLC 2004). However with the invasion of 'improved pasture grasses' that alter the fuel loads in the savannas (Rossiter 2001) the fire regimes are changing.

The improved pasture grasses dry off late in the dry season, and carry high fuel loads. Late season fires in areas vegetated with improved pastures tend to burn very hot, and can pose a severe hazard to life and property (TLC 2004). As the fires become more extensive and more intense, the shrubby understorey of the *Eucalypt* forests is replaced with exotic grasses (Cook 1991).

Fuel loads from exotic grasses can build up in a single growing season and are able to support fires every year and sometimes twice a year (Cook 1991). This prevents sufficient time between burning events to allow the woody sprouts to become saplings (Rossiter 2001). As a result communities are reduced to two distinct layers; canopy trees and a ground layer of suppressed woody sprouts (Williams *et al.* 2002).

To date the spread of exotic grasses including gamba grass (*Andropogon gayanus*), annual and perennial mission grass (*Pennisetum pedicellatu, Pennisetum polystachion*) and guinea grass (*Panicum maximum syn. Urochloa maxima*) has been limited to the main populated areas and areas of historic disturbance. Outbreaks of mission grass in particular are now occurring in areas progressively further away from historical disturbance, especially along road alignments. The change in the fire regimes with the increased fuel loads are of particular concern to the populated and forested areas (TLC 2004).

Fire management principles on the Tiwi Islands have been developed in consultation with Bushfires Council NT, whose advice is that hazard reduction burning is currently the only effective method of providing adequate insurance against destructive late season fires. Hazard reduction burning is presently carried out early in the dry season within plantation lease areas, and where fuel loads are likely to create a significant risk. In the future, fuel management will be reviewed in line with results from the biodiversity monitoring programme, and areas identified as requiring fire protection for biodiversity conservation have been identified as fire exclusion zones (TLC 2004).

Woinarski *et al.* (2003c) summarised the recent fire history (1993-1999) on the Tiwi Islands as being concentrated along the roads and in more frequently visited areas. It is also noted that large areas of western Melville Island and central Bathurst Island are burnt almost every year while the less accessible eastern area of Melville is burnt less frequently. This summary is fairly consistent with the fire history for 2005, up to 27 September 2005. Figure 15.1 shows that the eastern half of Melville Island has been free of fire whereas the central and eastern areas, where population is greater and areas are more accessible, the occurrence of fire has been greater. Fire occurrence has been less prevalent on Bathurst Island but is distributed fairly evenly over the Island.

Figure 15.1: Fire Scar History 2005, of the Tiwi Islands (up to 27th September 2005)

Source: North Australia Fire Information (2005)

15.2 Objectives and standards

Matilda will work with the TLC and the local land owners to adopt a local fire management plan to prevent the spread of wild fires into or out of the camp and processing areas. Matilda will utilise fire management practices already in use on the island and work in conjunction the Northern Territory Parks and Wildlife Commission to develop a fire management strategy.

Within the mine and camp areas, Matilda will adopt a 'no unauthorised fire' policy.

All burning including back burning and installation of fire breaks will be conducted in accordance with the *Bushfires Act 1980* and the *TPWC Act 1999*.

Relevant legislation, standards and policies

The relevant legislation, standards and policy are:

- *Fire and Emergency Act 2004*
- *Bushfires Act 1980*
- *Territory Parks and Wildlife Conservation Act 2000*.

15.3 Definition of issues and impacts

The introduction of grassy weed species including gamba grass (*Andropogon gayanus*), annual and perennial mission grass (*Pennisetum pedicellatu, Pennisetum polystachion*) and guinea grass (*Panicum maximum syn. Urochloa maxima*) significantly alter the fire regimes of the tropical savannas, making the fires a lot hotter and more destructive than the native cooler fires. These fires burn the canopy of trees, causing mortality, and the exotic grasses regenerate quickly and do not allow sufficient time for native woody species to sprout. This changes the forest or woodland structures (Cook 1991).

Areas of high fuel loads that have not been subject to hazard reduction can result in hot wild fires late in the season. These fires can be very destructive, and promote the establishment of exotic species.

Fire breaks around the camp and processing will consist of a 15 m vegetation free corridor surrounding the camp and processing areas. Fire breaks will be maintained on a six month basis and will be cleared by front-end loader and grader. The 15 m fire break will be adequate to prevent un-controlled wild fires entering the camp and processing area.

The camp and processing area will be a 'fire free' area apart from controlled burning of waste. Emergency response procedures will be put in place in the event that there is a fire in this area. Fire within the camp could potentially cause localised soil hydrocarbon contamination, or escape and spread outside the mining area, threatening local communities and infrastructure.

15.4 Management

Matilda has developed a Draft Fire Environmental Management Plan which is presented in Section 25.9.

Fire breaks will be maintained around the perimeter of the camp and processing areas on a six month basis and will be cleared by front-end loader and grader. The 15 m fire break will be adequate to prevent un-controlled wild fires entering the camp and processing area.

Matilda will avoid entering any weed-infested areas around the historically disturbed areas on the Island, in order to prevent the introduction of weeds to the mining areas. A weed monitoring program will also be established to quickly identify and eradicate weeds if they are found in the mining area and along the haul road. This will prevent a change in the local fuel loads and fire regimes.

A 'no unauthorised fire' policy will be adopted in the camp and processing area, to reduce the risk of accidental fire to the camp, processing area and surrounding areas. In the case of fire in the camp or processing area, Matilda's fire safety procedures will be followed. Fire extinguishers and fire hose reels will be placed strategically around the camp in case of fire (Figure 15.2)

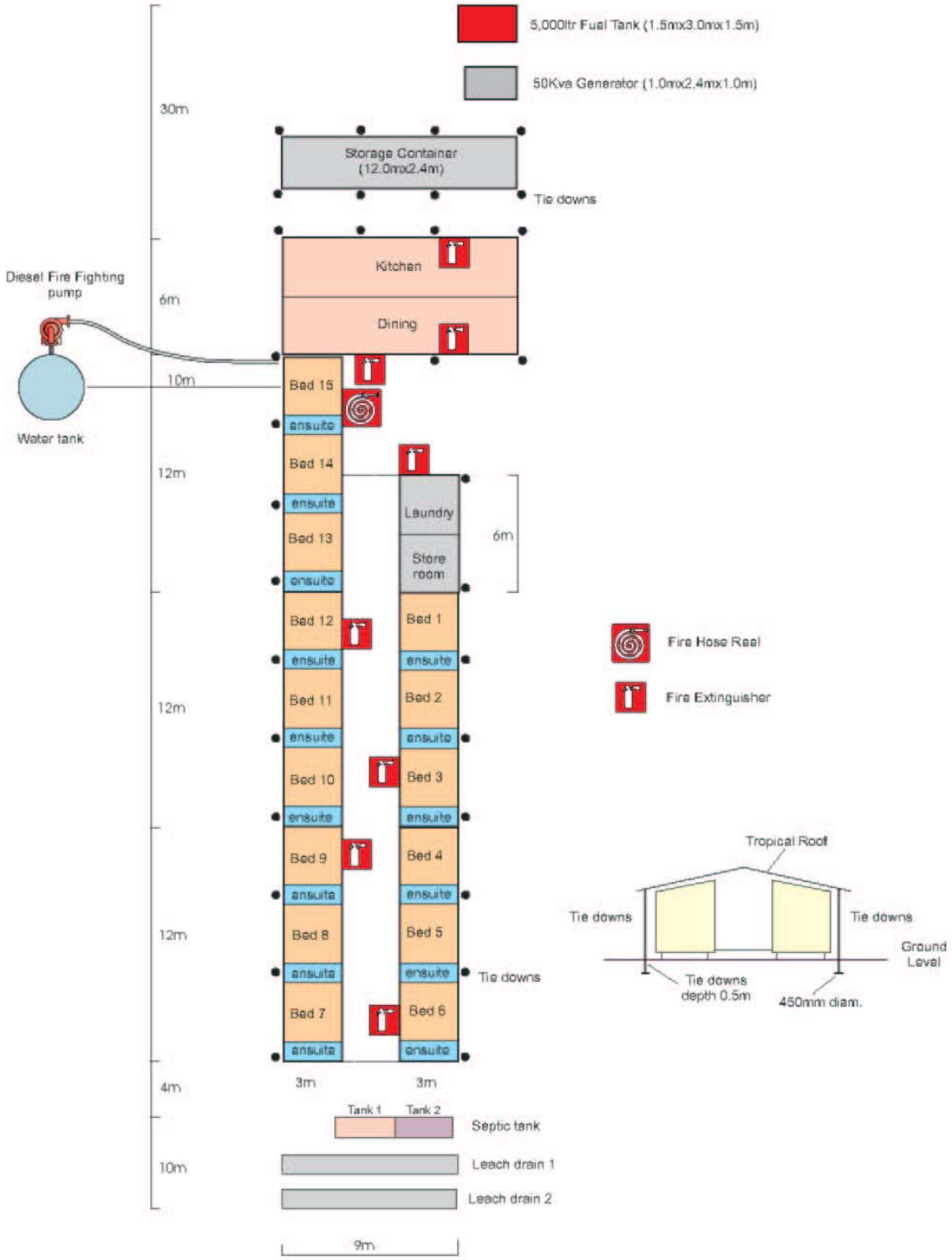

Figure 15.2: Locations of Fire Extinguishers and Fire Hose Reels Around the Camp

15.5 Commitments

Matilda commits to working with the TLC and the local land owners to adopt a local fire management plan to prevent the spread of wild fires into or out of the camp and processing area (Section 15.2).

Matilda commits to a 'no unauthorised fire' policy within the mine and camp areas (Section 15.2).

Matilda commits to maintaining firebreaks on a half yearly basis (Section 15.4).

Matilda commits to avoiding areas infected with weeds to prevent weed spread that will alter fire regimes (Section 15.4).