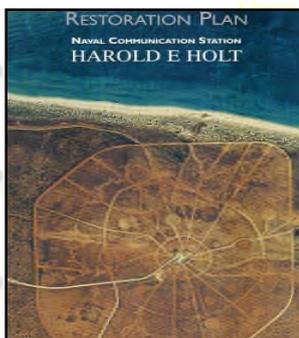




PROJECTS

CONTAMINATED LAND & GROUNDWATER



COMMONWEALTH DEPARTMENT OF DEFENCE

Contam 9

Environmental Restoration Plan, Naval Communication Station Harold E Holt, Northwest Cape, WA.

An Environmental Restoration Plan was prepared for the Department of Defence for NCS Harold E Holt. The site was built in 1966 by the US Navy. In 1999 it reverted to the Commonwealth. An initial desk study identified potential environmental issues associated with base operations, historical waste disposal, fuel and chemical storage and applications.



A comprehensive site investigation program was developed, comprising groundwater monitoring, soil investigation bores and trial pits over three separate areas extending over 15km². A landfill investigation comprised a geophysical magnetic survey and trial pits, landfill gas and groundwater monitoring. Gazetted asbestos disposal sites were examined to determine the extent, demarcation and capping provisions.



The restoration plan allowed for the excavation and removal of contaminated soils above applicable environmental guidelines for disposal within a purpose built Class IV disposal facility, the first to be designed and built in Western Australia. Part of the remedial strategy included bio-remedial treatment of hydrocarbon contaminated soils in a specially built treatment cell, with restoration of treated soils back to the land where possible. Laboratory bioremediation trials were run to assess the treatability.



The plan included restoration of excavation borrow pits located throughout the base through re-soiling and re-seeding with native flora species. A digital terrain model was used to assess the visual impact of the restoration from adjacent areas.



A groundwater risk assessment was undertaken to determine the level of risk to the environment from remaining residual contaminants, including hydrocarbons and organo-chlorine pesticides. The risk assessment specifically examined apparent risk to the relict stygofauna community endemic to the karst limestone aquifer beneath the base, and the risk posed by failure of the landfill containment.

Technical papers were submitted on aspects of the restoration plan to the 1997 Engineering Excellence Awards, WA and the 4th National Hazardous and Solid Waste Convention in Brisbane, April 1998.

Aerial photograph courtesy of DoD/DoLA

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