Mundaring Water Treatment Plant and Sawyers Valley Water Storage Tanks

Water Corporation

Report and Recommendations
of the Environmental Protection Authority

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1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment and Heritage on the environmental factors relevant to a proposal by the Water Corporation (the proponent) to construct a Water Treatment Plant in Mundaring and Water Storage Tanks in Sawyers Valley (Figure 1).

The EPA was advised of the proposal in May 2002. Based on the information provided, the EPA considered that while the proposal had the potential to have some environmental effect, the proposal could be readily managed to meet the EPA's environmental objectives. Consequently it was advertised in *The West Australian* newspaper on 15 July 2002, that, based on a suitable Environmental Referral document, the EPA intended to set a level of assessment as Assessment on Referral Information and to advise the public of the proposal.

The proponent has submitted a referral document (Water Corporation, 2002) for this proposal setting out the details of the proposal, potential environmental impacts, and giving commitments to manage the potential environmental impacts that were identified. The referral documentation can be viewed on the Water Corporation website, www.watercorporation.com.au. The EPA considers that the proposal described can be managed in an environmentally acceptable manner subject to the commitments of the proposal being legally binding.

The EPA therefore has determined under Section 40 (1) that the level of assessment for the proposal is Assessment on Referral Information, and this report provides the EPA advice and recommendations in accordance with Section 44 (1).

2. The proposal

The proposal is described in detail in Section 2 of the proponent's Environmental Referral documentation.

The proposal is to construct a Water Treatment Plant (WTP) in Mundaring with an ultimate nominal capacity of 250ML/d and up to three 50 mega litre (ML) steel clear water storage tanks, in Sawyers Valley. The WTP will filter and dose all water pumped from Mundaring Weir to the Goldfields and Agricultural Water Supply (G&AWS) and to the eastern metropolitan hills suburbs. It will include sufficient treatment processes to provide effective multiple barriers to the entry of contaminants which could cause unacceptable water quality outcomes in the supply system and the customer taps. The introduction of filtration will significantly improve the quality of water supplied to the eastern metropolitan hills suburbs and the G&AWS. Treatment processes will include the following (Figure 2):

- Pre-chlorination (for plant slime control);
- Powder activated carbon dosing (if required to reduce taste and odour);
- Lime water and carbon dioxide pre dosing (to achieve pH 5.6-5.8);
- Potassium permanganate dosing (to oxidise manganese and iron);
- Aluminium sulphate (liquid alum) dosing (for coagulation);
- Polyacrylamide powder type polyelectrolyte dosing (to assist flocculation);

- Direct filtration through conventional gravity filters (dual media – anthracite and sand/gravel);
- Residuals separation, thickening, dewatering and disposal to landfill offsite;
- Backwash water recovery and return to Mundaring Weir;
- Dissolved air flotation (future);
- Ozonation (future);
- Granular activated carbon filtration or the MIEX (magnetic ion exchange) process (future);
- Fluoridation with fluosilicic acid;
- Lime water and carbon dioxide post-dosing;
- Chloramination disinfection (chlorine gas then aqueous ammonia dosing); and
- Clear water storage (and disinfection contact) tanks.

The proposal will involve the clearing of 20 hectares (ha) of forest within the Helena River public water supply catchment within a portion of Water Reserve No 6203, and also State Forest No 7, Sawyers Forest Block. The Water Corporation is seeking to excise the land (a total of 20.6 ha, including a firebreak and portion of the land is already cleared for the existing tanks at Sawyers Valley (approximately 0.6 ha)) from the Water Reserve and the State Forest and to acquire freehold title to the land in due course.

Existing water treatment and chemical storage facilities (including for chlorine) at Mundaring Weir will be relocated to the new site. The two existing 9ML concrete water storage tanks at Sawyers Valley will be converted to store backwash water and service water for the WTP.

A bitumen access road and a 22kV overhead powerline will be constructed/upgraded beside the existing Mundaring-Kalgoorlie Pipeline from Great Eastern Highway, Sawyers Valley, to the proposed WTP site.

An underground supernatant return pipeline (to recycle 10% of plant inflow used for backwashing the filters) and a small potable water supply pipeline will be constructed beside the existing Mundaring-Kalgoorlie Pipeline from the proposed WTP site back to Mundaring Weir, terminating with the eastern alternative route down to the reservoir edge (Figure 3).

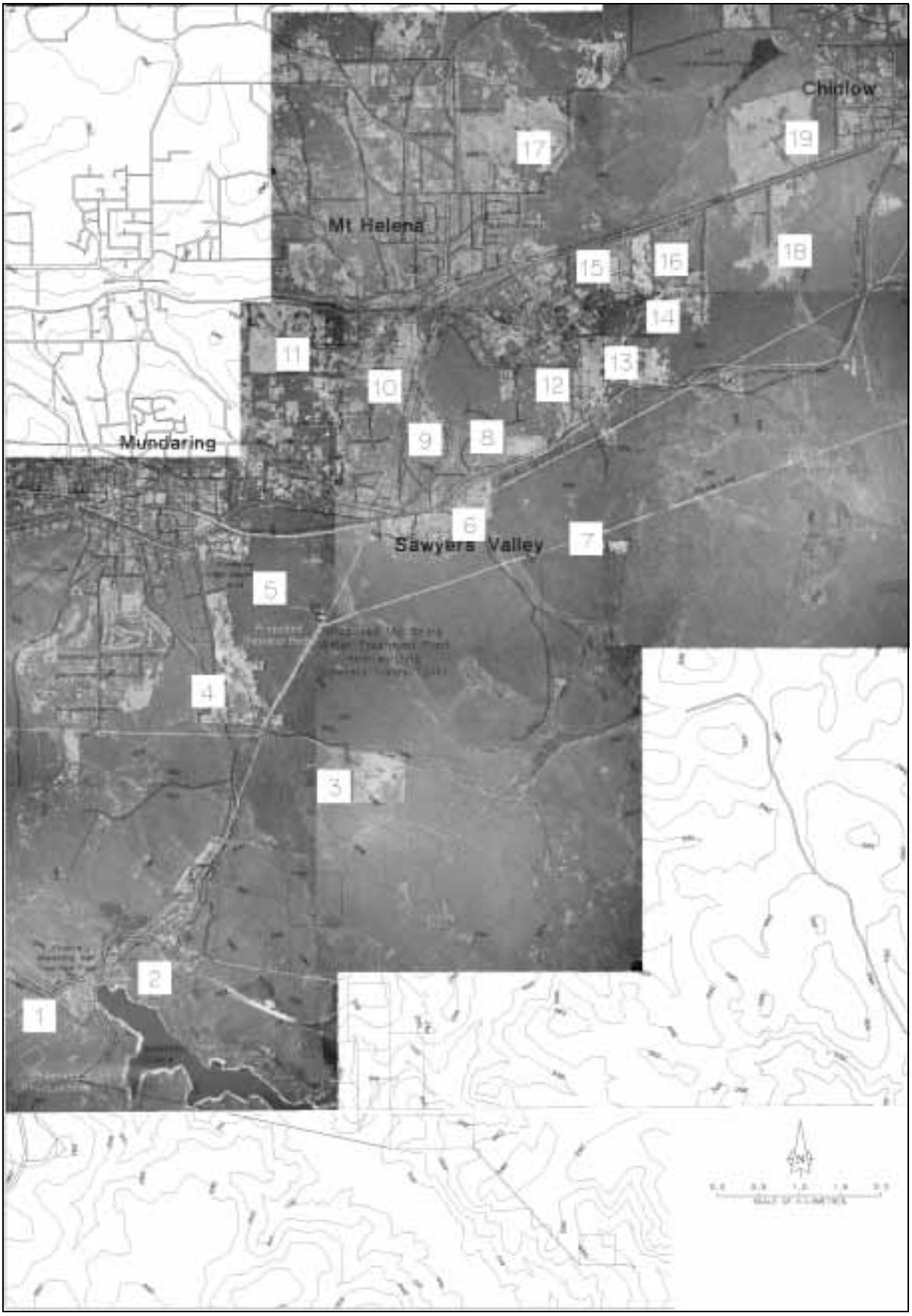

Figure 1: Locality Plan and site alternatives

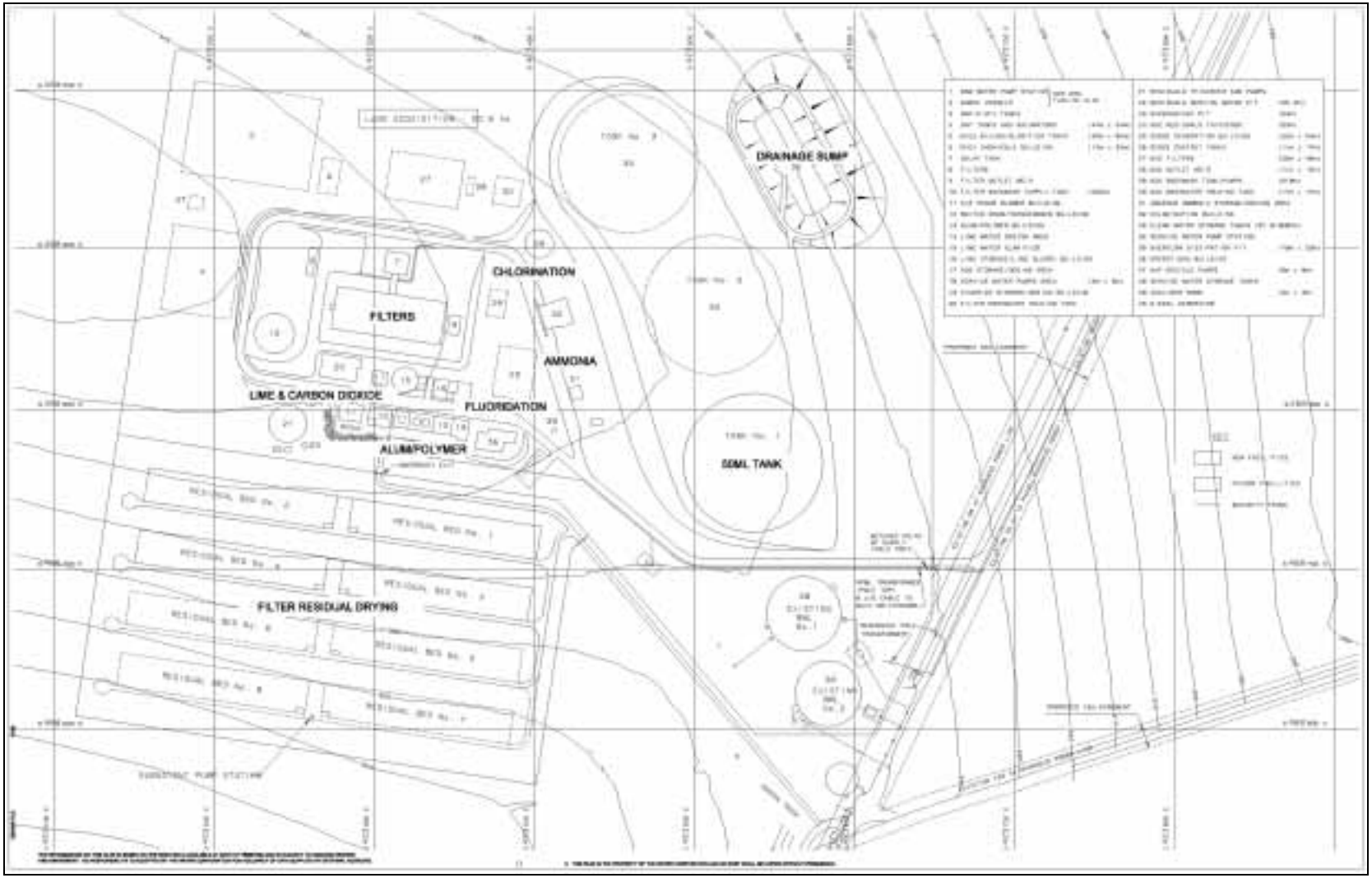

Figure 2: WTP Site Layout

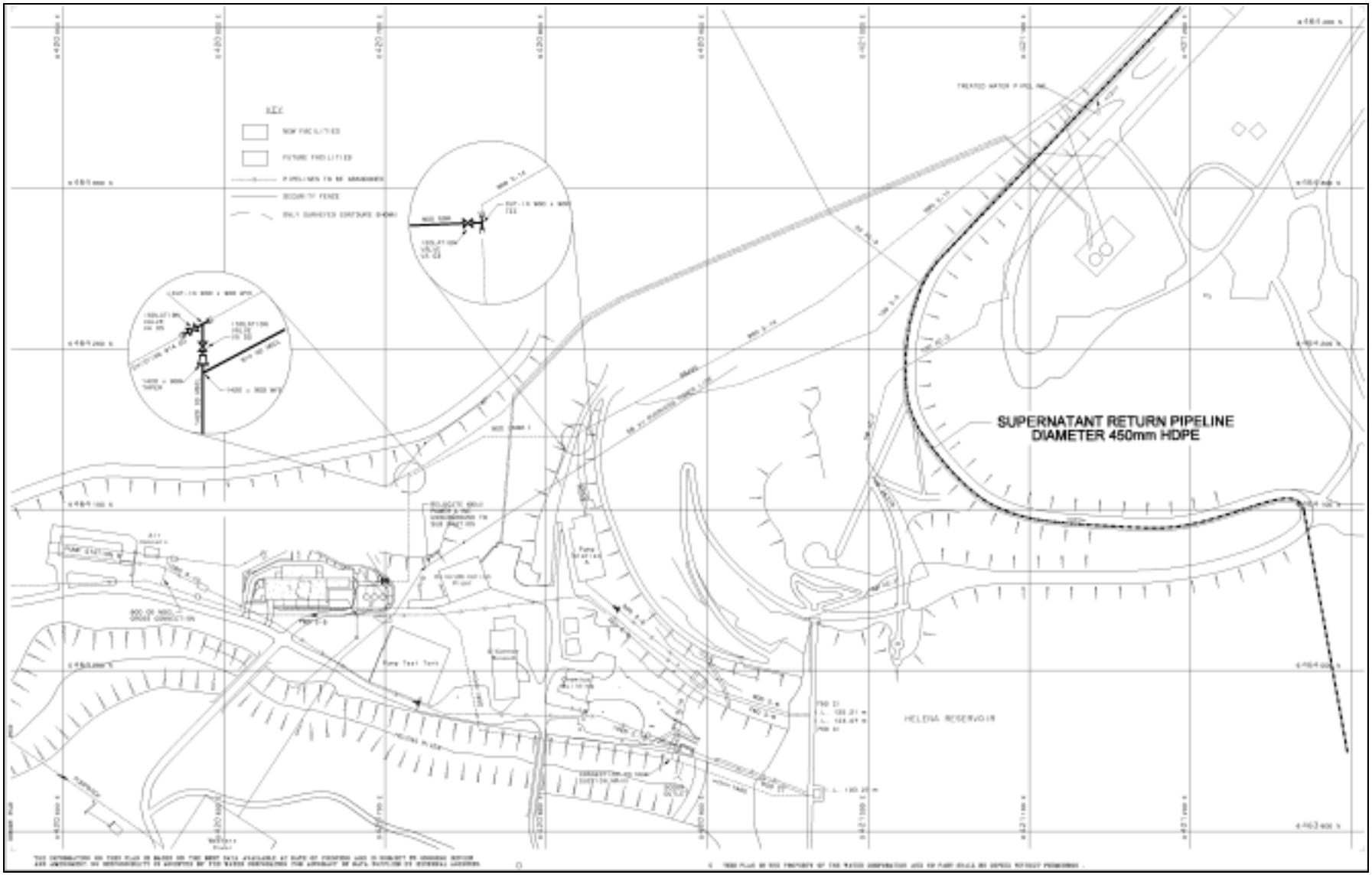

Figure 3: Pipeline Route

Table 1: Key proposal characteristics

Element	Key characteristics	Description
Water Treatment Plant (Total area required: 20.6ha Area to be cleared: 20ha)	Capacity	• Complete Stage 1 to 150ML/d nominal capacity (by June 2005 approx) • Complete Stage 2 to 190ML/d nominal capacity (by 2010 approx) • Complete Stage 3 to 250 ML/d nominal capacity (by 2030 approx)
	Water Storage tanks	• Complete in Stage 1 one 50ML steel clear water tanks (by Dec 2003 approx) • Complete in Stage 2 the second and third 50ML tanks (by 2010 approx)
	Associated pipework and scour valves	• Supernatant and water supply pipeline to be constructed. • Pipeline for chlorination and chemical dosing.
	Water treatment and chemical storage facilities	Relocation of existing facilities at Mundaring Weir to new site
	Residual Drying beds	Constructed on 5ha of the cleared land
	Aerator	To be constructed approximately 50 metres upstream of Mundaring Weir.
	Clearing of vegetation	20 hectares approx
	Environmental offset package	To acquire land for salinity mitigation, provision of funding to establish a Biodiversity Trust and additional funding of the Cockatoo Care Program.
Overhead Powerline	Capacity	22kV overhead powerline upgrade of the existing powerline from Great Eastern Highway, Sawyers Valley to the WTP
Access Road	Length	Approximately 1 kilometre
	Area of disturbance	An existing track will be widened and bituminised.

3. Consultation

During the preparation of the Referral document, the proponent has undertaken consultation with government agencies and other major stakeholders, in particular the Department of Conservation and Land Management (CALM), the Conservation Commission of Western Australia (CCWA) and the Water and Rivers Commission (WRC) and other key stakeholders. The organisations consulted, the comments received and the proponent's response are included in the Referral documentation.

The proponent proposes to consult with the Hills communities and people living along the Goldfields pipeline, Shires through to Kalgoorlie, and the media, through the planning and evaluation processes. This is covered in a communication strategy paper that has been developed (Water Corporation, 2002). The aim of the strategy paper is to inform and involve the community and stakeholders at key stages of the planning and implementation process. The proponent has committed to prepare and implement a Communications Strategy (Commitments 15 and 16) to ensure that the proponent continues to liaise with the community and other stakeholders during the construction and operation of the plant to ensure that the community is consulted during these phases.

4. Relevant environmental factors

In the EPA's opinion the following are the relevant environmental factors of the proposal:

a) Fauna

b) Terrestrial vegetation; and

c) Groundwater quality.

4.1 Fauna

Environment Protection and Biodiversity Conservation (EPBC) Act 1999 issues

Under the EPBC Act, actions that are likely to have a significant impact on a matter of national environmental significance are subject to a referral, assessment and approval process by the Commonwealth.

Two marsupial and two bird species recorded in the area west of Mundaring Weir are listed under the EPBC Act (and triggers Commonwealth assessment of this proposal). These are as follows:
-Southern Brown Bandicoot or Quenda (*Isoodon obesulus obesulus*) is listed as Endangered
-Western Native Cat, Chuditch or Western Quoll (*Dasyurus geoffroii*) is listed as vulnerable
-Carnaby's Cockatoo (*Calyptorhynchus latirostris*) is listed as Endangered
-Baudin's Cockatoo (*Calyptorhynchus baudinii*) is listed as vulnerable

The proponent has committed to carry out a spring survey on the subject land to confirm fauna impacts can be minimised (Commitment 1). The proponent has committed to preparing and implementing a construction EMP (Commitments 4 and 5) which will include specific management for the protection of fauna and habitat trees as identified in the flora/fauna survey. The proponent runs the Cockatoo Care program which aims to protect the Carnaby's and Baudin's Cockatoo (as well as the Forest Red Tailed Cockatoo) and will expand this program as part of a mitigation strategy for this proposal. In addition, the proponent is establishing a Biodiversity Trust as a mechanism for providing offsets against this and other relevant proposals.

Given the widespread nature of these four species, the small area to be cleared and the commitments made by the proponent, the EPA considers that the proposal can be managed to achieve an acceptable environmental outcome with regard to protected fauna.

Other fauna issues

The proponent has committed to carry out a spring survey of flora and fauna on the subject land for the WTP and pipeline route (Commitment 1), the purpose of which is to assess fauna impacts. The proponent has also committed to a construction environmental management plan (Commitments 4 and 5) to ensure that construction does not affect impact on fauna.

4.2 Terrestrial vegetation

The proposal will involve the clearing of 20 ha of forest for the WTP and storage tanks, and minor clearing will be undertaken for the upgrading of the access road and laying of the pipeworks.

The EPA regards terrestrial vegetation with regard to biological diversity as being a key environmental factor. In 1996, the Commonwealth Government, with all State and Territory Governments, signed the National Strategy for the Conservation of Australia's Biological Diversity. Conservation of biological diversity is a foundation stone of ecologically sustainable development. In this regard, one of the objectives of the National Strategy for Ecologically Sustainable Development is to protect biological diversity at the ecosystem, species and genetic levels and to maintain essential ecological processes and life support systems (EPA, 2000).

The proposal is within the area covered by the EPA's *Position Statement Number 2: Environmental Protection of Native Vegetation in Western Australia* and it is the EPA's expectation that it meet the elements detailed in Section 4.3, '*Clearing in other areas of Western Australia'*.

Assessment

Water Treatment Plant

The site for the WTP, Part of Water Reserve 6203 within the plant boundaries and surrounding 4m firebreak, is on an upland ridge line within the Dwellingup 2 vegetation community (open forest of *Eucalyptus marginata* on lateritic uplands in subhumid and semi-arid zones). This is a common vegetation community in the area (Geo-Eng, 2002). The site has been burnt by a hot fire in the last two years. There are two large infections of dieback (*Phytopthora cinnamomi*) on the WTP site and weeds are common in the valley south of the WTP site. The area surrounding the existing concrete water storage tanks has been previously cleared and gravelled.

The proponent selected the site from 19 options, shown in figure 1. The following criteria were used in assessing the options:

- Area of clearing required;
- Suitability of access roads for large chemical trucks;
- Proximity to the Mundaring Weir to minimise the diameter and length of the reticulation main returning treated water to consumers between Mundaring Weir and the WTP site;
- Proximity to main Mundaring-Kalgoorlie pipeline and amenities;
- Elevation and the requirement for an extra pumping station and balance tanks if other options were chosen;
- Land zoning;
- Number of property owners affected by compulsory land resumption;
- Availability of a buffer zone for the chlorinator to nearby residences and private land; and
- Capital costs and operating costs.

Five ha of the 20 ha are to be cleared for the residual drying beds. Alternative methods of residual dewatering were investigated. Although other methods required the clearing of less land, the Water Corporation indicated that the alternative processes were much less energy efficient (Sinclair Knight Merz, 2002). The EPA considers the assessment of alternatives to be acceptable.

The proponent has committed to carry out a spring survey of flora and fauna on the subject land for the WTP (Part of Water Reserve 6203 within the plant boundaries and surrounding 4m firebreak) and pipeline route (Commitment 1). With reference to the proposed WTP area, the purpose of this survey is to confirm that no priority listed flora exists and to assess biodiversity impacts. The proponent has also committed to a construction environmental management plan (Commitments 4 and 5) to ensure that construction does not affect any important areas of vegetation and habitat trees. The proponent has also committed to preparing and implementing a weed and dieback management plan (Commitments 7 and 8).

Taking into account the proponent commitments, the EPA considers that the WTP component of the proposal can be managed to achieve an environmentally acceptable outcome in relation to impacts on vegetation.

Proposed pipelines

Two options were presented for the pipeline routes. The eastern route shown in Figure 3 was preferred due to the absence of Aboriginal Heritage issues. The supernatant return and small potable water supply pipelines follow the current Mundaring-Kalgoorlie pipeline from Mundaring Weir to the current storage tanks south of Sawyers Valley, alongside the existing track. Most of this alignment is cleared and none of the vegetation communities affected by the proposed pipeline are uncommon. No significant impacts were identified on the proposed underground pipeline from the eastern side of the Mundaring Weir town to the current storage tanks south of Sawyers Valley. The supernatant return pipeline diverges from the current Mundaring-Kalgoorlie pipeline at the Mundaring Weir townsite to the north-eastern side of Mundaring Weir, where it discharges. The last 100m of this route between the bitumen road and the reservoir passes through native vegetation and granite outcrops.

The proponent has committed to carry out a spring survey of flora and fauna on the subject land and pipeline route (Commitment 1). With reference to the pipeline route, the purpose of this survey is to minimise environmental impacts during the construction and laying of the pipeline. The proponent has also committed to a construction management plan, a component of which includes protection of any important areas of vegetation, habitat trees and granite outcrops (Commitments 4 and 5).

Taking into account the proponent commitments, the EPA considers that the pipeline component of the proposal can be managed to achieve an environmentally acceptable outcome in relation to impacts upon vegetation.

Proposed bitumen access road and 22kV overhead powerline from Great Eastern Highway to the proposed Water Treatment Plant and Storage Tanks.

The proposed access road and powerline upgrade is from Great Eastern Highway, Sawyers Valley to the proposed WTP, a distance of one kilometre. There is already an existing gravel track and powerline on the southeastern side of the pipe, both to be upgraded, to allow for heavy vehicular access and to increase electricity supply. There will be limited clearing and disturbance of vegetation at the creek lines northeast of the WTP site for the bitumen access road and powerline upgrade.

The original plans provided by the proponent aligned the access road on the northwestern side of the Mundaring-Kalgoorlie pipeline. The EPA considered that this was inappropriate due to the large number of individuals of the species *Synaphea acutiloba*, a Priority 4 plant species, located in the area to be cleared. There are 67 live plants of *Synaphea acutiloba* on this side, as compared to the 9 individuals that may be disturbed on the southeastern side. It was therefore considered more environmentally acceptable to upgrade the existing track on the southeastern side of the pipeline. The proponent has committed to realigning the road to the southeastern side of the pipe, where there is an existing track (Commitment 6).

Taking into account the proponent commitments, the EPA considers that the road component of the proposal can be managed to achieve an environmentally acceptable outcome in relation to impacts upon vegetation.

Provision of environmental offsets

The clearing of 20 ha of forest within the Helena River public water supply catchment within a portion of Water Reserve No 6203, and part of State Forest No 7, Sawyers Forest Block, is required for construction of the water treatment and residuals drying facility at the proposed site. The proponent is seeking to excise the land (approx 20.6 ha) from the Water Reserve and the State Forest.

The proponent has made the commitment to provide environmental offsets for the 20ha of clearing which must take place for the project (Commitments 17 and 18). The proponent has already purchased an 80ha parcel of cleared farmland within the catchment and will be preparing a package of measures to the satisfaction of the EPA, to provide green offsets against this and other Corporation projects. The package requires further development and will include some planting with deep rooted vegetation on the 80ha of land for salinity mitigation, provision of funding to establish a Water Corporation Biodiversity Trust and additional funding of the Cockatoo Care Program. The establishment of the Biodiversity Trust is a new initiative based on recognition by the Water Corporation that biodiversity is best protected by purchase of areas in good condition, rather than trying to rehabilitate areas which are degraded or where native biodiversity has been lost.

The proposal to purchase land as a basis for salinity mitigation and to provide green offsets is supported by the EPA. Taking into account the proponent commitments, the EPA considers that the proposal can be managed to achieve an environmentally acceptable outcome in relation to vegetation.

4.3 Groundwater quality

There are a number of potential sources for groundwater contamination from the WTP. The potential sources are from the chemical storage area, the dissipation pit and the residual beds.

The 20.6 hectares of land for the proposed WTP is currently held under the Land Administration Act 1997 dual tenure of:
- Water Reserve No. 6203, reserved for the purposes of Reservoirs, Aqueducts, Water Courses and Catchment Areas since 30 September 1898 and currently vested in the Water Corporation; and
- State Forest No 7, Sawyers Forest Block, vested in the Conservation Commission of WA and managed by CALM.

The Water Corporation is seeking to excise the land from the Water Reserve and the State Forest and to acquire freehold title.

The subject land lies within a Country Areas Water Supply Act 1947 proclaimed catchment area and is subject to clearing controls under Part IIA of the Act. It is part of the Mundaring Weir drinking water source catchment recommended for Priority 1 (P1) source protection. P1 areas are defined to ensure that there is no degradation of the water source and are declared over land where the provision of the highest quality public drinking water is the prime beneficial land use. This catchment area is extremely important as it provides the sole public drinking water supply for the Goldfields and Agricultural Water Supply Scheme. P1 areas are managed in accordance with the principle of risk avoidance so land development is generally not permitted. Water Treatment Plants are a conditional land use in P1 areas and water source protection issues pertaining to them are managed via conditions recommended by WRC.

The proponent has committed to prepare and implement a Stormwater Management Plan (Commitments 9 and 10), which will include the management for stormwater runoff and any water generated through the process, to ensure that stormwater does not cause erosion and water quality impacts. The proponent has also committed to prepare and implement a Groundwater Management Plan (Commitments 11 and 12), to ensure that there will be no significant impacts on the groundwater from chemical storage and loading areas, the dissipation pit and the residuals area.

Taking into account the proponent commitments, the EPA considers that proposal can be managed to achieve an environmentally acceptable outcome in relation to groundwater protection.

4.4 Other Issues

Hazard Management
To ensure that the handling, storage and disposal of hazardous materials related to the proposal does not result in impacts on the environment or people, the proponent has committed to prepare and implement a Hazardous Materials Management Plan (Commitments 13 and 14), which will include procedures for maintaining an inventory of hazardous materials, storage, handling and emergency response, to the requirements of the Department of Mineral and Petroleum Resources.

Aboriginal heritage
The proponent commissioned an ethnographic survey and an archaeological investigation of Aboriginal sites of the proposal area (Rory O'Connor, 2002; Quartermaine, 2001). As a result of the survey it has been established that the proposal will not disturb any areas or sites of Aboriginal significance. In addition, no archaeological sites were located within the designated project area. To ensure that sites of Aboriginal significance are protected, the proponent has committed to preparing and implementing a construction environmental management plan (Commitments 4 and 5), which will address these issues.

Traffic
During construction it will be necessary to remove rock from the site. During operation there will be less than one truck per day on average transporting chemicals to the site or solid waste away to landfill. Trucks will use the new access road entering from Great Eastern Highway.

Other
During construction it will be necessary to remove approximately 180,000 cubic metres of laterite caprock from the site. To ensure that the impacts from blasting, noise and other impacts are minimised, the proponent has committed to preparing a Construction Environmental Management Plan (Commitments 4 and 5).

The EPA considers that hazards, Aboriginal Heritage, traffic and noise impacts can be adequately managed.

5. Conclusions

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment and Heritage on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

The EPA concludes that the factor of Fauna can be managed to meet the EPA's objective for the protection of fauna. Based on the identified impacts and commitments, the EPA considers that the fauna impacts of this proposal can be managed to be environmentally acceptable.

The EPA concludes that the factor of Terrestrial Vegetation can be managed to meet the EPA's objective for the protection of native vegetation. Based on advice from CALM, CCWA and WRC, and identified impacts and commitments, the EPA considers that the terrestrial vegetation impacts of the proposal can be managed to be environmentally acceptable.

The EPA concludes that the factor of Groundwater quality can be managed to meet the EPA's objective of protecting groundwater quality. Based on advice from CALM, CCWA and WRC, the identified impacts, and commitments the EPA considers that the groundwater impacts of the proposal can be managed to be environmentally acceptable.

The EPA concludes that the proposal is unlikely to have any significant adverse impact on the relevant factors of fauna, terrestrial vegetation and groundwater quality, provided it is implemented in accordance with the description provided in the referral documentation and the environmental commitments made by the proponent. The EPA therefore recommends that these commitments be adopted by the Minister as legally binding environmental conditions under Part IV of the *Environmental Protection Act 1986.*

6. Recommendations

The EPA considers that the proponent has demonstrated, in the Referral document, that the proposal can be managed in an environmentally acceptable manner and provides the following recommendations to the Minister for the Environment and Heritage:

1. That the Minister notes that the proposal being assessed is for the construction of Mundaring Water Treatment Plant & Sawyers Valley Water Storage Tanks.
2. That the Minister considers the report on the relevant environmental factors as set out in Section 4.
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions and proponent commitments as set out in Appendix 2, including the provision for implementation of an environmental management system.
4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

Water Corporation, 2002. *s38 Referral of Mundaring Water Treatment Plant Proposal*, May 2002.

Water Corporation, 2002. *Mundaring Water Treatment Plant & Sawyers Valley Water Storage Tank – A4 Plans and Appendices for EPA Referral Forms*, February 2002.

Geo-Eng Pty Ltd, *Mundaring Water Treatment Plant, Flora and Fauna Study (Report to Water Corporation)*, January 2002.

Sinclair Knight Merz, 2002. *Mundaring WTP – Residuals Treatment, Desktop Report*, February 2002.

Rory O'Connor, 2002. *Report on an ethnographic survey of the proposed Mundaring Water Treatment Plant Project*, January 2002.

Quartermaine Consultants, 2001. *Report on an archaeological investigation of Aboriginal Sites Mundaring Water Treatment Plant Sawyers Valley*. December 2001.

Water Corporation, 2002. *Mundaring Water Treatment Plant & Sawyers Valley Water Storage Tank – A3 Plans and Appendices for EPA Referral Forms*, February 2002.

Environmental Protection Authority (EPA)(2000). *Environmental Protection of Native Vegetation in Western Australia – Clearing of Native Vegetation, with Particular Reference to the Agricultural Area*, Position Statement No 2, December 2000.

Appendix 2

Recommended Environmental Conditions and Proponent's Commitments

Statement No.

RECOMMENDED CONDITIONS AND PROCEDURES

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

MUNDARING WATER TREATMENT PLANT & SAWYERS VALLEY WATER STORAGE TANKS

Proposal: Construction of a Water Treatment Plant in Mundaring with an ultimate nominal capacity of 250ML/d and construction of up to three 50ML steel water storage tanks in Sawyers Valley as documented in schedule 1 of this statement. An underground supernatant return pipeline and a potable water supply pipeline will be constructed beside the existing Mundaring-Kalgoorlie pipeline from the proposed Water Treatment Plant site back to the Mundaring Weir.

Proponent: Water Corporation

Proponent Address: PO Box 100, Leederville, WA 6902.

Assessment Number: 1456

Report of the Environmental Protection Authority: Bulletin 1072

The proposal referred to above may be implemented subject to the following conditions and procedures:

Procedural conditions

1 Implementation and Changes

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is not substantial, the proponent may implement those changes upon receipt of written advice.

2 Proponent Commitments

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of the conditions in this statement.

3 Proponent Nomination and Contact Details

3-1 The proponent for the time being nominated by the Minister for the Environment and Heritage under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment and Heritage has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.

3-3 The nominated proponent shall notify the Department of Environmental Protection of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

4-1 The proponent shall provide evidence to the Minister for the Environment and Heritage within five years of the date of this statement that the proposal has been substantially commenced or the approval granted in this statement shall lapse and be void.

Note:The Minister for the Environment and Heritage will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment and Heritage, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- the environmental factors of the proposal have not changed significantly;
- new, significant, environmental issues have not arisen; and
- all relevant government authorities have been consulted.

Note: The Minister for the Environment and Heritage may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

Environmental conditions

5 Compliance Audit and Performance Review

5-1 The proponent shall prepare an audit program in consultation with and submit compliance reports to the Department of Environmental Protection which address:

- the implementation of the proposal as defined in schedule 1 of this statement;
- evidence of compliance with the conditions and commitments; and
- the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environmental Protection is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

Usually, the Department of Environmental Protection prepares an audit table which can be utilised by the proponent, if required, to prepare an audit program to ensure that the proposal is implemented as required. The Chief Executive Officer is responsible for the preparation of written advice to the proponent, which is signed off by either the Minister or, under an endorsed condition clearance process, a delegate within the Environmental Protection Authority or the Department of Environmental Protection that the requirements have been met.

6 Closure Plans

6-1 At least six months prior to the anticipated date of closure, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Closure Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

The Final Closure Plan shall address:

1) removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;

2) rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and

3) identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

6-2 The proponent shall implement the Final Closure Plan required by condition 6-2 until such time as the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, that the proponent's closure responsibilities are complete.

6-3 The proponent shall make the Final Closure Plan required by condition 6-2 publicly available, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

Procedures

1 Where a condition states "to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority", the Chief Executive Officer of the Department of Environmental Protection will obtain that advice for the preparation of written advice to the proponent.

2 The Environmental Protection Authority may seek advice from other agencies, as required, in order to provide its advice to the Chief Executive Officer of the Department of Environmental Protection.

Notes

1 The Minister for the Environment and Heritage will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environmental Protection over the fulfilment of the requirements of the conditions.

Schedule 1

The Proposal (Assessment No. 1456)

The proposal is for the construction of a Water Treatment Plant (WTP) in Mundaring with an ultimate nominal capacity of 250ML/d and construction of up to three 50ML steel water storage tanks, south west of Sawyers Valley (Figure 1). The WTP will filter and treat all water pumped from Mundaring Weir before distribution to the Goldfields and Agricultural Water Supply (G&AWS) and to the eastern metropolitan hills suburbs. The introduction of filtration will significantly improve the quality of water supplied to the eastern metropolitan hills suburbs and the G&AWS.

The proposal will involve the clearing of 20 hectare (ha) of forest within the Helena River public water supply catchment within a portion of Water Reserve No 6203, and also State Forest No 7, Sawyers Forest Block (Figure 1). The proponent is seeking to excise the land from the Water Reserve and the State Forest and to acquire freehold title to the land in due course.

Included in the 20 ha to be cleared is 5 ha for the residual drying beds. Alternative methods of residual dewatering were investigated. Although other methods required the clearing of less land, the Water Corporation indicated that the processes were much less energy efficient.

Existing water treatment and chemical storage facilities (including for chlorine) at Mundaring Weir will be relocated to the new site. The two existing 9ML concrete water storage tanks at Sawyers Valley will be converted to store backwash water and service water for the WTP.

A bitumen access road and a 22kV overhead powerline will be constructed/upgraded beside the existing Mundaring-Kalgoorlie Pipeline from Great Eastern Highway, Sawyers Valley, to the WTP site.

An underground supernatant return pipeline (to recycle 10% of plant inflow used for backwashing the filters) and a small potable water supply pipeline will be constructed beside the existing Mundaring-Kalgoorlie Pipeline from the WTP site back to Mundaring Weir, terminating with the eastern alternative route down to the reservoir edge (Figure 3).

The main characteristics of the proposal are summarised in Table 1 below.

Table 1: Key proposal characteristics

Element and key characteristic	Description	
Water Treatment Plant (Total area required: 20.6 ha Area to be cleared: 20ha)	Capacity	• Complete Stage 1 to 150ML/d nominal capacity (by June 2005 approx) • Complete Stage 2 to 190ML/d nominal capacity (by 2010 approx) • Complete Stage 3 to 250 ML/d nominal capacity (by 2030 approx)
	Water Storage tanks	• Complete in Stage 1 one 50ML steel clear water tanks (by Dec 2003 approx) • Complete in Stage 2 the second and third 50ML tanks (by 2010 approx)
	Associated pipework and scour valves	• Supernatant and water supply pipeline to be constructed. • Pipeline for chlorination and chemical dosing.
	Water treatment and chemical storage facilities	Relocation of existing facilities at Mundaring Weir to new site
	Residual Drying beds	Constructed on 5ha of the cleared land
	Aerator	To be constructed approximately 50 metres upstream of Mundaring Weir.
	Clearing of vegetation	20 hectares approx
	Environmental offset package	To acquire land for salinity mitigation, provision of funding to establish a Biodiversity Trust and additional funding of the Cockatoo Care Program.
Overhead Powerline	Capacity	22kV overhead powerline upgrade of the existing powerline from Great Eastern Highway, Sawyers Valley to the WTP
Access Road	Length	Approximately 1 kilometre
	Area of disturbance	An existing track will be widened and bituminised.

Figure 1: Locality Plan and site alternatives
Figure 2: WTP Site Layout
Figure 3: Pipeline route

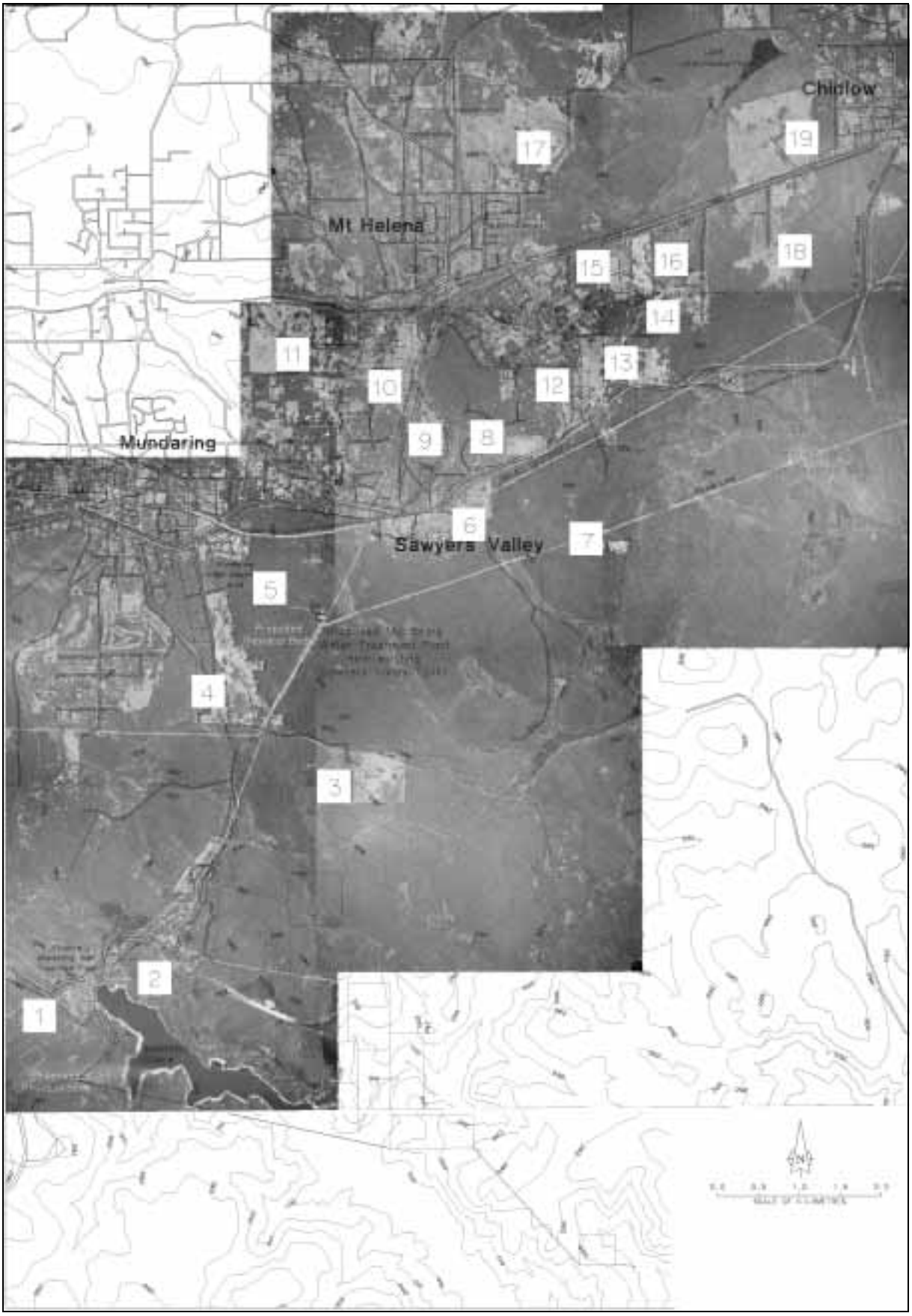

Figure 1: Locality plan and site alternatives

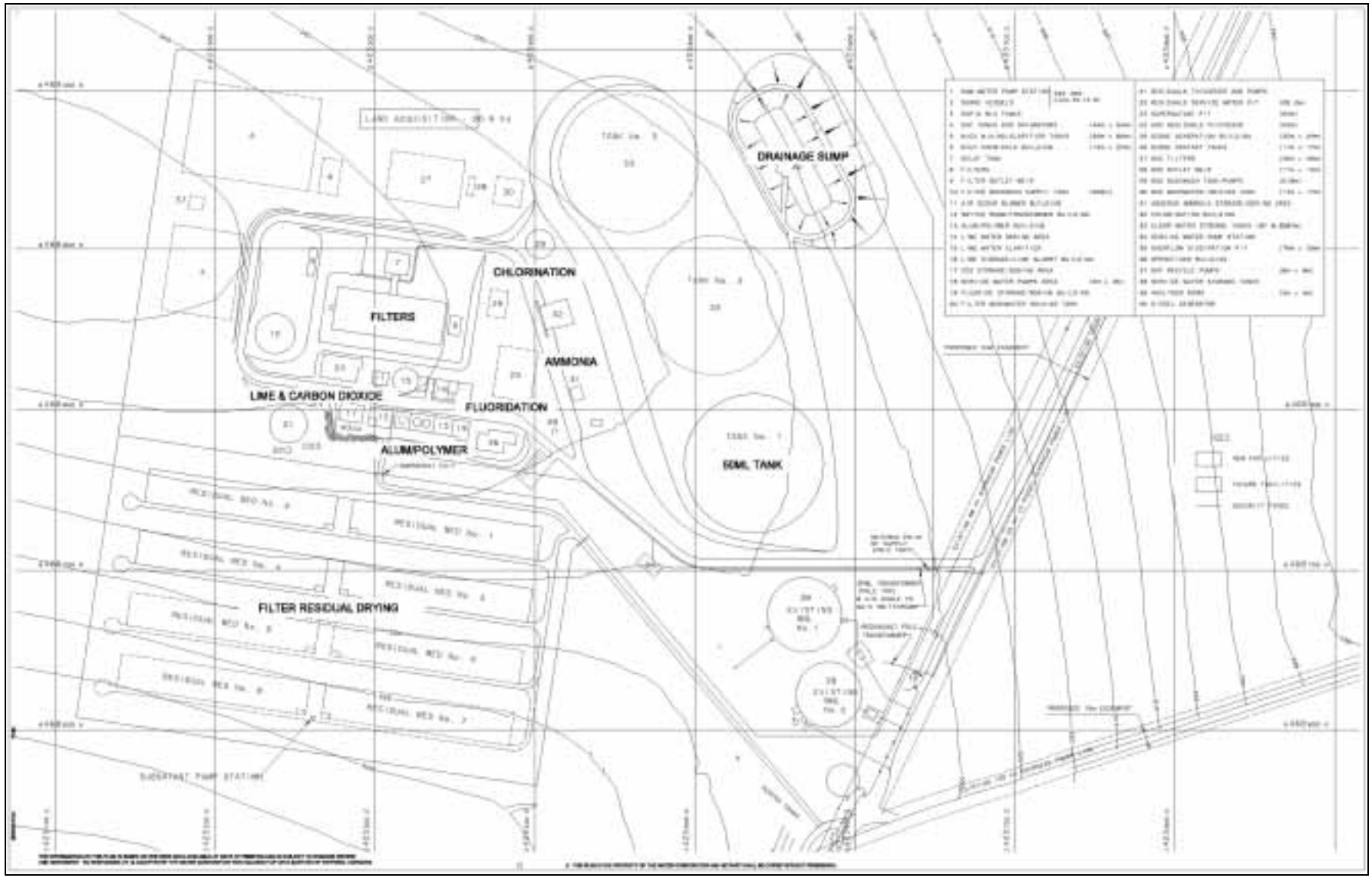

Figure 2: WTP Site Layout

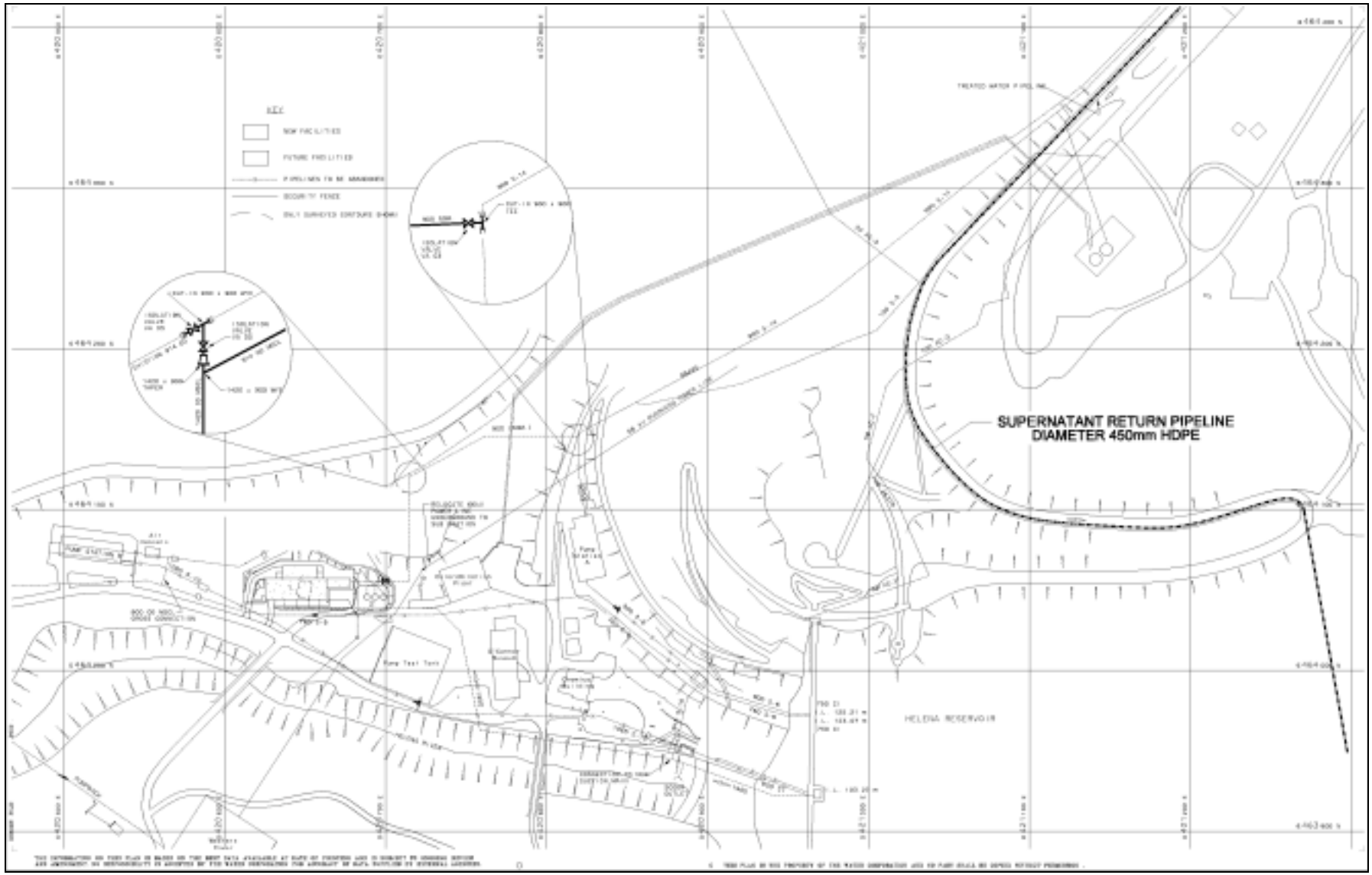

Figure 3: Pipeline Route

Schedule 2

Proponent's
Environmental Management Commitments

October 2002

Mundaring Water Treatment Plant & Sawyers Valley Water Storage Tanks (Assessment No. 1456)

Water Corporation

Summary of Proponent's Environmental Management Commitments
Mundaring Water Treatment Plant & Sawyers Valley Water Storage Tanks

Number	Topic	Action (Commitment)	Environmental Objective	Timing	Advice
1	**Flora/Fauna Survey**	Carry out a spring survey of flora and fauna on the subject land and pipeline route.	To confirm no priority listed flora exists in the area of the treatment plant, to assess the biodiversity and fauna impacts, and to assess the environmental impacts of laying the pipeline.	Prior to clearing of the site	CALM
2	**General Environmental Management**	Prepare a Project Environmental Management System (PEMS) for the operations of the Water Treatment Plant. The PEMS will include elements such as: i) An environmental policy and corporate commitment to it ii) Mechanisms and processes to ensure: • Planning to meet environmental requirements; • Implementation of actions to meet environmental requirements; • Measurement and evaluation of environmental performance; • Review and improvements to environmental outcomes.	To ensure that any potential environmental impacts associated with the operations of the Water Treatment Plant are managed and minimised.	Prior to commissioning.	
3	**General Environmental Management**	Implement the PEMS.	To ensure that that any potential environmental impacts associated with the operations of the Water Treatment Plant are managed and minimised.	During commissioning and operation.	

Number	Topic	Action (Commitment)	Environmental Objective	Timing	Advice
4	**Construction**	Prepare a Construction Environmental Management Plan (EMP) for the Project, which will include specific management for: • Contractors. • Incident reporting. • Dust. • Noise. • Blasting. • Waste Disposal. • Groundwater. • Stormwater runoff. • Erosion. • Clearing management. • Transport. • Safety. • Upgrade of powerline • Protection of any important areas of vegetation, granite outcrops, fauna and habitat trees, as identified in the flora/fauna survey. • Protection of sites of Aboriginal significance or archaeological sites.	To ensure that environmental impacts of construction are minimised.	Prior to construction.	CALM
5	**Construction**	Implement the Construction EMP.	To ensure that environmental impacts of construction are minimised.	During construction.	
6	**Construction**	The proponent will construct the access road and powerline from Great Eastern Highway to the WTP to follow the existing track on the south-eastern side of the Mundaring to Kalgoorlie pipeline.	To ensure that environmental impacts of construction are minimised	During construction	MRWA
7	**Weed and Dieback management**	Prepare a Weed and Dieback Management Plan which will address the following: • Identify weed and dieback areas • Identify management strategies	To ensure that the introduction, spread and intensification of weeds and dieback are minimised during construction and operation.	Prior to construction.	CALM
8	**Weed and Dieback management**	Implement the Weed and Dieback Management Plan	To ensure that the introduction, spread and intensification of weeds and dieback are minimised during construction and operation.	During construction and operation	CALM

Number	Topic	Action (Commitment)	Environmental Objective	Timing	Advice
9	**Stormwater management**	Prepare a Stormwater Management Plan, which will include the management for stormwater runoff and any water generated through the process to ensure that stormwater does not cause erosion and water quality impacts.	To ensure that stormwater runoff is managed and does not impact on the environment.	Prior to commissioning.	WRC
10	**Stormwater management**	Implement the Stormwater Management Plan	To ensure that stormwater runoff is managed and does not impact on the environment.	During operation	WRC
11	**Groundwater management**	Prepare a Groundwater Management Plan, which will show that there will be no significant impacts on the groundwater from chemical storage and loading areas, dissipation pit and the residuals area.	To ensure that there is no impact on the groundwater	Prior to commissioning	WRC
12	**Groundwater management**	Implement the Groundwater Management Plan	To ensure that there is no impact on the groundwater	During operation	WRC
13	**Hazardous Materials**	Prepare a Hazardous Materials Management Plan, which will include: • procedures for maintaining an inventory of hazardous materials; • storage and handling requirements; and • emergency response.	To ensure that the handling, storage and disposal of hazardous materials related to the Project does not result in impacts on the environment or people.	Prior to commissioning.	MPR
14	**Hazardous Materials**	Implement the Hazardous Materials Management Plan.	To ensure that the handling, storage and disposal of hazardous materials related to the Project does not result in impacts on the environment or people.	During operation.	MPR
15	**Community Consultation**	Prepare a Communications Strategy to ensure that the proponent continues to liaise with the community and other stakeholders during the development, construction and operation of the Plant.	To ensure that the community is consulted during development, construction and operation of the Plant.	Prior to Construction	
16	**Community Consultation**	Implement a Communications Strategy	To ensure that the community is consulted during development, construction and operation of the Plant.	During the development, construction and operation of the Plant.	

Number	Topic	Action (Commitment)	Environmental Objective	Timing	Advice
17	**Environmental offset package**	Prepare an environmental offset package which includes • revegetation of land for salinity mitigation • establishment of a biodiversity trust • expansion of the Cockatoo Care Program	For salinity mitigation and to enhance biodiversity in comparable systems.	Prior to commissioning	CCWA/ CALM/ WRC
18	**Environmental offset package**	Implement the environmental offset package	For salinity mitigation and to enhance biodiversity in comparable systems.	Within 3 years of commissioning	CALM/ WRC

Abbreviations

DEP – Department of Environmental Protection
WRC – Water and Rivers Commission
CALM – Department of Conservation and Land Management
CCWA – Conservation Commission of WA
MPR – Department of Mineral and Petroleum Resources
MRWA – Main Roads Western Australia