



**Environmental Protection Authority**

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# ENVIRONMENTAL PROTECTION AUTHORITY

**ANNUAL REPORT**

2005 • 2006

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## TRANSMITTAL TO THE MINISTER

Hon Mark McGowan MLA  
MINISTER FOR THE ENVIRONMENT

In accordance with s21 of the *Environmental Protection Act 1986*, I submit the EPA's Annual Report for the year ended 30 June 2006.

It is with pleasure that, on behalf of the EPA, I advise that for the reporting period to 30 June 2006, the EPA has conducted its functions such that it has met its objectives outlined in s15 of the *Environmental Protection Act 1986*. This has been achieved with the assistance of the services and facilities of the Department of Environment.

A handwritten signature in black ink, appearing to read 'W. J. Cox', is written over a light grey rectangular background.

Dr Walter Cox

CHAIRMAN

8 September 2006

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## CHAIRMAN'S OVERVIEW

The Environmental Protection Authority (EPA) was established by Parliament to provide independent advice, and with the broad objective of protecting the State's environment. This role is undertaken by providing overarching environmental advice to the Minister for the Environment through the preparation of environmental protection policies and the assessment of development proposals and management plans, as well as providing public statements about matters of environmental importance. One of the avenues for public statements is this Annual Report.



*EPA Chairman  
Dr Walter Cox*

The report is structured in a manner which introduces the members of the EPA, and then provides a discussion of the major environmental issues on the EPA agenda, followed by information on the environmental assessment of proposals and planning schemes, strategic assessments and policy development. Towards the end of the report there are details of information on legislation issues, consultation and site visits undertaken by the EPA.

The State's growth in the resource sector is reflected in the assessments undertaken by the EPA. In 2005/06 nine iron ore mines and associated infrastructure were assessed including Fortescue Metal Group's Pilbara Iron Ore and Infrastructure Project Stage B EPA (EPA Bulletin 1202) and Cloudbreak (EPA Bulletin 1206). In addition four power station proposals were assessed.

Major assessments included:

- EPA Bulletin 1209: Worsley Alumina – Efficiency and Growth Increase of Existing Operations to 4.4 million tonnes per annum Alumina Production.
- EPA Bulletin 1215: Alcoa's Wagerup Unit 3 Expansion
- EPA Bulletin 1221: Proposed Gorgon Development – Barrow Island and Offshore Northwest shelf.

The major issue with the Worsley Alumina proposal (see page 29 below) was access to State Forest. The EPA considered that there was a need for long term comprehensive investigations to be undertaken in order to establish a better understanding of biodiversity and ecosystem function for proposed mining areas, particularly in relation to the drying climate trend. Mining exclusion criteria, which would be applied once the biodiversity related values were clearly established, were set out up-front in the recommended Ministerial Conditions.

Alcoa's proposed Wagerup Unit 3 Expansion (see page 27 below) raised a number of complex issues relating to local meteorology, atmospheric emissions and community

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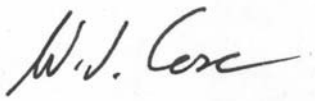
concerns. The EPA, on the basis of advice received from the Department of Health, recommended that the proposal proceed subject to a package of stringent conditions.

The EPA's assessment of the proposed Gorgon Development on Barrow Island (see page 25 below) raised a number of significant issues including risk to terrestrial plant and animal species from introduced pests, marine environmental impacts arising from dredging, the possible extinction of stygo - and troglo - bitic fauna as well as invertebrate species and protection of flatback turtles. While the Gorgon Joint Venturers had undertaken considerable research to investigate these issues there were, in the view of the EPA, unacceptable risks to the unique environmental values of the A – Class Nature Reserve and adjoining waters including Marine Protection Areas. In the case of the flatback turtle in particular there was insufficient information available to determine appropriate management strategies to minimise risks to the Pilbara flatback turtle population.

In June 2006 the EPA advised the Minister for the Environment in Bulletin 1221 that, on environmental grounds, the project should not proceed.

Despite a significant increase in workload timelines have generally been maintained in line with outcomes of the Keating Review. This is the result of the engagement of additional staff as a result of additional funding provided by Government and the dedicated contribution of staff in the EPA Service Unit. There are ongoing concerns however with retaining and attracting experienced staff given the substantial differential in remuneration offered by the mining sector and its consultancy service providers, and the public sector.

Portfolio Ministers Dr Judy Edwards and Mark McGowan took a deep interest in issues addressed by the EPA and their interest and support is appreciated.



Dr W. J. Cox  
CHAIRMAN

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## MEMBERS

The EPA has five members: a full-time Chairman, a part-time Deputy Chairman and three part-time members. However, members work far in excess of their part-time appointments. A record of members' attendance at EPA meetings is provided in Appendix 9.

### **Dr Walter Cox**

*EPA Chairman. Commenced as a member in January 2003 and as Chairman from 31 March 2003 to 30 June 2009.*

Prior to taking up his position as EPA Chairman, Dr Cox was Executive Dean of the Faculty of Business and Public Management and Pro Vice-Chancellor at Edith Cowan University.

Dr Cox has a Bachelor of Science (Agriculture) degree from the University of Western Australia (WA) and a PHD in Soil Science from the University of California, Davis.

He has previously held a number of chief executive officer positions in Government including Executive Director, Department of Conservation and Land Management, East Perth Redevelopment Authority, Subiaco Redevelopment Authority and Managing Director of the Water Authority of Western Australia.

Dr Cox is the Chairman of the Independent Audit Group that audits water use in the Murray-Darling Basin and reports to the Murray-Darling Basin Ministerial Council.

He has served on a number of Boards and Committees including WA State Planning Commission, Water Services Association of Australia (Chairman), Workpower and is presently the Chairman of Leadership Western Australia, Chairman of the Chemistry Centre of Western Australia Advisory Board and Chairman Agricultural Research Western Australia. He is also a Commissioner on the National Water Commission.



### **Dr Andrea Hinwood**

*Member from 7 May 2003 to 10 May 2005. Deputy Chairman 11 May 2005 until 6 May 2008.*

Dr Hinwood is a senior lecturer in Environmental Management at Edith Cowan University and has a Masters in Applied Science from RMIT, Victoria and a PhD in environmental epidemiology from Monash University, Victoria.

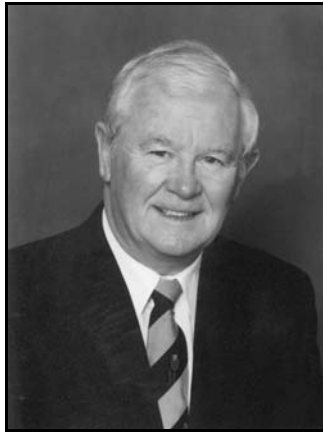
Dr Hinwood has worked in the environmental protection area for over twenty years and has a wide experience in investigation, monitoring and management. She has managed the areas of contaminated sites, chemicals management and emergency response for the Victorian EPA prior to managing



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air quality with the Department of Environmental Protection in Western Australia. Dr Hinwood's research interests are in the areas of exposure assessment, hazardous air pollutants, health and environmental impacts of chemicals in the environment.

Dr Hinwood has a breadth of national and international experience, participating in a range of Ministerial and National Environmental Protection Council (NEPC) working groups. She chaired one of the United Nations Environment Program (UNEP) Technical Options Committees on substances that deplete the ozone layer and was a member of the Technology and Economic Assessment Panel under the Montreal Protocol for a period of five years.



**Mr Denis Glennon**

*Member from 1 January 1998 until 30 March 2007*

Mr. Glennon retired from the private sector following a lengthy career at senior levels in the environmental management business in Australia. He has specialist knowledge in industrial waste practices, and waste treatment technology development and implementation. He served as Chairman

of Environment Business Australia for three years (then called Environment Management Industry Association of Australia).

He has a comprehensive knowledge of environmental management and pollution prevention systems, environmental engineering, sustainable industry development, and environmental management policy formulation.

He is the recipient of an Order of Australia (AO) for his "service to environmental protection through the management, control and treatment of industrial and hazardous wastes, and to the community".



**Ms Joan Payne**

*Member from 31 March 2003 until 30 March 2008*

Ms Payne, former President of the Waterbird Conservation Group, has developed expertise in a broad range of environmental issues through interaction with conservation and community groups as well as Government Departments (State and Federal) since 1976.

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Ms Payne was an Executive Member of the Conservation Council of WA from 1988 to 2001 including holding the position of Vice President for a number of years.

Her membership, both past and present, of Government committees and working parties, includes:

- The Western Australian Water Resources Council;
- Water Planning and Policy Standing Committee;
- Darling Range Regional Park Community Consultative Committee;
- National Wetlands Advisory Committee;
- Department of Environmental Protection's System 6 Implementation Group;
- Water and River Commission Stakeholders Council;
- Water and River Commission State Water Reform Council;
- System 6 Update Technical Advisory Group;
- Department of Conservation and Land Management's Wetlands Coordinating Committee;
- National Consultative Committee on Kangaroos; and
- National Shorebird Conservation Taskforce.

**Professor Steven Halls**

*Member from 11 May 2005 until 10 May 2007*

Professor Steven Halls is an Engineer/Biologist by training with BSc (Hons) and PhD degrees from the Universities of Manchester and London respectively and has been an Environmental Scientist and Researcher for the past 25 years. His fields of

professional expertise include environmental policy analysis and review; technology, risk and impact assessment; industrial ecology, eco-innovation and eco-efficiency; and the design and implementation of environmental management and associated education programs.



Currently Professor Halls is Director of Murdoch Environment at Murdoch University where he is responsible for the development and implementation of integrated environmental projects. He is also Professor in the School of Environmental Science and International Research Co-ordinator for the Environmental Biotechnology CRC. Until recently he was the Director of United Nations Environment Programme International Environmental Technology Centre (IETC) based in Japan. Previously Professor Halls was Project Team Leader for the European Commission Environment Directorate concerning the accession of Central and East European Countries into the European Union (EU). He has held appointments at several UK Universities and was Research Scientist/Assistant Professor at the University of Texas in the USA.

Recently he has been appointed as a member of the European Commission

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Steering Group on Waste Management Policy and Strategy for Europe. Currently he is an external advisor and reviewer to the EC RTD Directorate on the development of an European Environmental Technology Action Plan and the European Union 6<sup>th</sup> Framework Programme on Research, Technology and Development respectively.

### **Advisory Positions**

- External Adviser (1988 - 1990) to US EPA on development of:
  - Risk assessment methodology for hazardous waste sites; and
  - Innovative technologies for remediation of hazardous waste sites (US EPA "SITES" Program).
- Member of European Commission Project on development of the Eco-Management and Audit Scheme ("EMAS") Regulation
- Member Advisory Committee on UK Postgraduate Education and Training in Environmental Management
- Advisory Member, UK Department of the Environment panel on Contaminated Land, 1994
- Chairperson of the Bedfordshire Local Agenda 21 Steering Group, 1996
- Member, European Commission DGXI Strategy Group for "Waste Management in Europe", 1996
- Member, UK Bio-Industry Association Environmental Biotechnology Committee, 1998
- Adviser, European Commission DG Research and Technology Development 2003
- Member of the Asia Productivity Organization "Green Productivity" Advisory Committee (GPAC) 2004

## **MAJOR ENVIRONMENTAL ISSUES**

The EPA has overarching responsibility for the provision of advice to Government on environmental matters, and the public expectation is that the EPA will assume broad custodial, or guardianship role in relation to the protection of air, water, soil, flora, fauna and the maintenance of biodiversity.

In fulfilling this role, the EPA has available an array of mechanisms, including provision of advice of either a general or particular nature under s16 of the *Environmental Protection Act 1986* (EP Act), and preparing assessment reports and Environmental Protection Policies (EPPs), State Environmental Protection Policies (SEPs) as well as Guidance Statements and Position Statements. In addition, the EPA retains a close link with Government departments which have the responsibility for the management of natural resources. Further information on the role of the EPA is provided in Appendix 1.

The EPA released its draft 2006 State of the Environment Report on 1 June 2006 (see page seven below).

The report identified a number of areas where there has been improvement since the last report in 1998:

- for the first time in Australia, increasing salinity trends in the Collie and Denmark rivers have stabilised or been reversed due to focused catchment management over several decades;

- reduced incidences of photochemical smog occurrences in Perth and declining sulphur dioxide levels in areas such as Kalgoorlie and Kwinana.
- recovery efforts have saved 13 native species from the verge of extinction;
- marine waters are generally in excellent condition and largely contaminant free; and
- household water usage has decreased to the target levels outlined in the State Water Strategy.

Also outlined, in the draft Report, were some good examples of WA's natural resource sectors embracing the concept of sustainability. These included the agriculture, fisheries, pastoralism and wood production sectors.

There are some forty areas where improvement is required (see Table 1 page nine below) and in the view of the EPA the eight highest priorities are:

- climate change;
- consumption;
- greenhouse gas emissions;
- Phytophthora dieback;
- introduced animals;
- weeds;
- land salinisation; and
- salinisation of inland waters.

Two fundamental pressures however continue to put stress on the environment. These are Climate Change and growth in Population/Consumption. Average rainfall is already 15% lower since 1975 and there is evidence of impacts including changes in species composition, rise in sea levels, reduced river-flow and lower water tables.

There is a direct link between greenhouse gas in the atmosphere and measured changes. While reduction in greenhouse gas production continues to be a priority the first priority is to develop strategies to adapt to climate change.

Similarly consumption and population growth, both domestic and international are placing increasing pressures on natural resources.

The Water Quality Improvement Plan (WQIP) for the Peel-Harvey Estuary (see page 16 below), which is nearing finalisation with Commonwealth financial assistance, is highlighting that the Estuary is at severe risk from the ongoing inflow of nutrients from its catchment.

The EPA will finalise the WQIP in 2006 and enhanced governance arrangements and preventative and remedial action will be required to ensure the environmental and social values expected by the community are maintained and enhanced.

Specific issues of interest during 2005-2006 follow.

### **Application of s.4A principles**

The *Environmental Protection Act 1988* contains a set of five Principles (s.4A) and, in giving effect to the Act, there is a need to have regard to them.

The Principles are:

- the precautionary principle
- the principle of intergenerational equity

- the principle of the conservation of biological diversity and ecological integrity
- principles relating to improved valuation, pricing and incentive mechanisms
- the principle of waste minimisation.

The EPA has incorporated the requirement to address these into its environmental impact assessment process. From a policy viewpoint, the Authority has published Position Statement 7 'Principles of Environmental Protection' which provides an expanded understanding of the principles and their implications.

## State of the Environment Reporting



*Media conference: launch of the draft State of Environment Report, June 2006.*

A major achievement for the EPA in 05/06 was the release of *State of the Environment Report Western Australia, Draft 2006* on 1 June. The report assesses the status of the key environmental issues in Western Australia and the progress towards the sustainable use, management, protection

and conservation of the State's natural resources.

The draft report is out for public comment until the 29 September 2006. The report was produced in hardcopy, CD and web versions. It is available at [www.soe.wa.gov.au](http://www.soe.wa.gov.au).

The EPA is particularly grateful to the 350 individuals involved in the development of the draft state of the environment (SoE) report, many of whom donated considerable time and expertise to the program. In all in excess of 50 organisations from a diverse range of stakeholder groups were involved.

The preparation of the draft SoE report is a good example of people from government, the private sector, academia and the community working together.

Throughout most of calendar 2005, the sixteen SoE working groups established by the EPA continued to develop their components of the draft SoE report. The working groups completed the draft themes (chapters) by January 2006. During this time, the EPA Service Unit also prepared many of the figures and maps for the draft report.

The EPA then reviewed the draft chapters focusing particularly on the key findings and suggested responses.

The SoE Steering Group concluded its role in providing strategic direction for the program when members endorsed the draft report in March, 2006.

Graphic design, editorial and production components were the focus for the first half of 2006.

**Table 1: State of Environment Report, Statewide priorities: Priority rankings for environmental issues**

★★★★★	★★★★★	★★★	★★	★
Climate change	Particulates	Photochemical smog	Indoor air	Stratospheric ozone depletion
Population and consumption	Changed fire regimes	Soil acidification	Air toxics	Sulfur dioxide
Greenhouse gas emissions	Clearing	Acidification of inland waters	Oxides of nitrogen	Carbon monoxide
Introduced animals	Soil erosion	Erosion and sedimentation of inland waters	Overgrazing	
Phytophthora dieback	Altered water regimes	Eutrophication	Trawling	
Weeds	Loss of wetlands	Introduced marine pests	Land contamination	
Land salinisation	Loss or degradation of fringing and instream vegetation	Transport	Marine contamination	
Salinisation of inland waters	Degradation of marine habitat	Water use in settlements	Appreciation and support for heritage	
	Settlement patterns	Energy use in settlements	Statutory recognition and protection of heritage	
		Waste generation and disposal		
		Heritage conservation and management		

Following the release of the report, staff in the EPA Service Unit conducted public forums on the purpose and findings of the report and encouraged public feedback. Public meetings were held in Perth, Mandurah, Kalgoorlie.

Esperance, Albany, Bunbury, Narrogin, Northam, Geraldton, Carnarvon, Karratha, Broome and Kununurra.

Forty environmental issues were addressed in the report. The EPA prioritised these based on sustainability criteria. Table 1 lists the priority rating for each issue. Five stars represents the most important issues; one star represents a lower priority.

It is anticipated that the final report will be completed in early 2007 following consideration of submissions received during the public comment period.

## Water issues



*Barrabup Pool on St John's Brook, near Nannup. South West Yarragadee Water Source Development. EPA field trip, June 2006.*

### **Perth Seawater Desalination Plant**

The Minister for the Environment requested the EPA in July 2005 to

review the environmental conditions applying to the Perth Desalination Plant and to recommend and report on proposed changes to these conditions under Section 46 of the EP act.

The Minister has specifically requested that the EPA review includes:

- revision of the Conditions in Statement 655 to be consistent with the requirements of the *State Environmental (Cockburn Sound) Policy 2005*;
- reinforcement of the importance of the Water Quality Management Plan (WQMP) in the conditions; and
- recommendations for a set of Dissolved Oxygen trigger levels for management intervention to ensure that relevant 'standards' are not exceeded.

The Water Corporation's proposed Perth Seawater Desalination Plant was originally assessed by the EPA in 2002/03, and the expansion of the plant was considered in 2004.

The Water Corporation has prepared a draft document which outlines their proposed approach to addressing the Minister's request. In addition, the document also addresses a new proposal by the Water Corporation to provide for a longer outfall pipeline as a contingency against inadequate mixing of the brine discharge.

The EPA is currently considering some of the technical issues related to dissolved oxygen in Cockburn Sound and related management options, with a view to an environmental review document being released for public comment.



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### ***South West Yarragadee Water Source Development***



*Small frog (Geocrinia leai) at Ironstone Gully in the Yarragadee Project Study Area. (May 2006: Mark Brundrett, Terrestrial Ecosystems Section, EPA Service Unit)*

The proposal by the Water Corporation to establish a 45 GL borefield near Jarrahwood and to transport that water into the Integrated Water Supply Scheme is being assessed by the EPA at the level of Environmental Review and Management Programme (ERMP).

The Scoping Document for the ERMP was approved by the EPA in September 2005 following extensive public consultation by the Water Corporation.

The ERMP document was released for public review for a twelve week period, closing on 22 May 2006. This proposal has generated substantial debate in the community, especially in the South west, and a substantial number of individual and pro-forma submissions have been received by the EPA. As part of its information gathering the EPA held meetings with key stakeholders at Nannup, Margaret River and Bunbury.

The Water Corporation is currently preparing its written response to the submissions and issues raised from the EPA's meetings with keystakeholders. The EPA is working closely with the Department of Water on this proposal, as that Department is required to make a decision on the 45 GL licence application made by the Water Corporation. The EPA expects to report on the proposal before the end of 2006.

### ***Compliance Monitoring – Gnamptarra and Jandakot Mounds***

In accordance with a delegation from the Minister for the Environment, the EPA has again reviewed the compliance of the Water and Rivers Commission/Department of Environment in relation to water management on the Gnamptarra and Jandakot Mounds.

The Department of Environment provided annual compliance reports on each of the mounds, stating that there continued to be a high level of non-compliance with water levels set under the Ministerial Conditions. The Department advised that this was largely attributable to the recent period of poor rainfall.

The EPA provided public advice to the Minister for the Environment expressing on-going frustration that conditions were being breached, some for an extended number of years. In relation to both the Gnamptarra Mound and Jandakot Mound, the EPA noted that there continues to be a high and unacceptable level of non-compliance with Ministerial Conditions.

The EPA also stated that, while it understands that issues such as climate variability makes management of the



groundwater more difficult, the response by the Department of Environment, on behalf of the Water and Rivers Commission, to comply with the existing Ministerial Conditions continues to be a source of frustration to the EPA. The Commission has a range of options available to it in the longer term, including reviewing existing criteria and conditions through s46 of the EP act. The EPA concluded that the current approach by the Department is not adequate in the short term as non-compliance remains environmentally and legally unacceptable.



*Western Pygmy Possums (Cercartetus concinnus) depend on natural vegetation for food and shelter sites and are largely extinct on the Swan Coastal Plain due to habitat disturbance.* (July 2006: John Dell Terrestrial Ecosystems Section, EPA Service Unit)

### ***Managed Aquifer Recharge using Treated Wastewater on the Swan Coastal Plain***

In August 2004, the Minister for the Environment requested that the EPA provide advice on managed aquifer recharge (MAR) using treated wastewater on the Swan Coastal Plain under section 16(e) of the *Environmental Protection Act 1986*.

The EPA released a Discussion Paper on this topic for 12 weeks public comment on 4 April 2005 and held six forums around the Perth metropolitan area. This allowed the EPA to obtain feedback on the issues raised in the Discussion Paper, and to consider public and government agency comments in the formulation of its advice. The EPA subsequently released its draft section 16(e) advice in July 2005 for a 4 week public comment period. Following consideration of the comments received in this stage of consultation the EPA finalised its section 16(e) advice in Bulletin 1199, released in October 2005.

The EPA advice stated in-principle support for the concept of wastewater reuse, and noted the potential for MAR using treated wastewater to play an important role in the sustainable management of Western Australia's water resources.

The EPA supports further investigation of MAR on the Swan Coastal Plain, while advocating a precautionary approach to ensure that the environment and public health are protected. A staged approach was recommended, starting with trials and projects of low risk. Given the lack of experience with MAR on the Swan Coastal Plain to date, and the site-specific nature of transport and attenuation of contaminants, the EPA considers that trials will be necessary prior to the implementation of any large scale MAR scheme. Proponents of MAR schemes will be required to undertake a systematic risk assessment of their proposal.

The EPA concluded that any MAR proposal that is likely, if implemented, to have a significant effect on the environment must be referred to the EPA

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under section 38 of the *Environmental Protection Act 1986*. The EPA expects that any large scale MAR using treated wastewater, or any trials or MAR proposals in areas of high environmental value, are likely to require risk assessment and environmental impact assessment. In line with Department of Environment and Department of Health advice, the EPA considers that trials should be conducted outside of Public Drinking Water Source Areas before any large scale proposal for use of MAR to augment drinking water supplies is developed.

### **Review of Fire Management in the Kimberley and Other Rangeland Regions of Western Australia**



*Fire front, Mitchell Plateau, November 2005 during Fire Review Committee field trip.*

There is evidence, supported by satellite imagery, that fire has increased in extent, intensity and frequency over the past 30 years and that this is impacting on the environment and ecology of the Kimberley and other parts of the Rangelands of Western Australia.

In response to a request in July 2005 from the then Minister for the Environment; Science, Dr Judy Edwards, MLA, to review and provide advice on the impacts of fires on biodiversity and human health in the Kimberley and other regions, the EPA commenced a review of fire management practices.

The EPA formed a Fire Review Committee comprising a previous Deputy Chairman, Dr Roy Green, and two current members, Dr Andrea Hinwood and Mrs Joan Payne to steer the review. The first task was to commission a paper *Fire in the Kimberley and Inland Regions of WA – Issues Paper*, prepared by Dr Jeremy Russell-Smith, a researcher based in Tropical Savannas Management Cooperative Research Centre in Darwin. The paper was released for comment in October 2005 closing mid December 2005.

The EPA also formed a Reference Group of key government agencies and other interested parties to assist in the review. In keeping with its terms of reference, the EPA undertook a series of meetings with a variety of people and organisations in the Kimberley and Pilbara regions. People attending the meetings represented a diverse range of interests including the pastoral and tourism industries, conservation and aboriginal interests as well as government agencies and the general community. Meetings were held in Newman, Roebourne, Port Hedland, Derby, Kununurra, Kalumburu and Broome in the week 7-11 November 2005 with further meetings in Fitzroy Crossing and Halls Creek from 28-30 November 2005. Some consultation was

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also undertaken in the Goldfields Region in March 2006.

The EPA released a document reflecting the views raised at those meetings and in submissions on 22 May 2006, *Fire Management in the Kimberley and other Rangeland regions of Western Australia: a Synopsis and Invitation for Further Public Comment*, for a 12 week public review period closing on 11 August 2006.

The main issues and concerns raised by the community were:

- fire regimes have changed over the past 30 years;
- fires are now more intense, more frequent and burn for long periods over large areas particularly in the Kimberley and desert regions;
- fire regimes are having a negative impact on biodiversity although the extent of the impact has not been documented;
- most fires in the Kimberley and Pilbara regions are lit by people, either accidentally, maliciously or deliberately for a range of purposes while most fires in the Goldfields are lit by lightning;
- there is a lack of scientific research on the impact on biodiversity;
- fires are not perceived to have a major impact on human health;
- there is confusion about responsibility for fire prevention and suppression;
- traditional fire management practices and knowledge may be useful;
- current resources are inadequate; and

- communications between agencies and the public could be improved.

The EPA will consider submissions on the Synopsis document, and any other information as it sees appropriate, and will conclude its review by presenting its views and recommendations to the Minister for the Environment under s16(e) of the *Environmental Protection Act 1986* by the end of 2006.

### **Environmental Values and Quality Objectives: Pilbara Coastal Waters**



*Dredge plume. Parker Point, Dampier, June 2004.*

The State Water Quality Management Strategy provides for the establishment of environmental values and environmental quality objectives as management goals to guide environmental impact assessment and natural resources management to protect the environment from the effects of waste inputs and pollution. The Strategy requires that thorough public consultation be undertaken to develop environmental values and environmental quality objectives prior to their

submission to the EPA for review and endorsement.

The Department of Environment has submitted to the EPA a report on the outcomes of a public consultation process on environmental values, environmental quality objectives and how they should be applied geographically within the State marine waters from Exmouth Gulf to Cape Keraudren.

The EPA has endorsed the proposed Environmental Quality Objectives and Levels of Ecological Protection as 'interim' to guide environmental impact assessment and management until they are more formally established through Government policy.

Further, the EPA has proposed the development of a State Environmental (Marine Waters) Policy covering all marine waters under State jurisdiction.

### **Environmental Quality Criteria: Coastal Waters**

On behalf of the EPA, the Department of Environment has been developing environmental quality criteria based on the recommended approaches of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000). These are quantitative benchmarks against which to assess monitoring data to determine whether the Environmental Quality Objectives are met. To inform criteria development, the Department has conducted baseline sediment quality surveys off the mid west and Pilbara coasts and commissioned a review of the response of coral communities to

stressors such as turbidity, salinity and water temperature.

### **Swan Bioplan**



*Rainbow Bee-eater (Merops ornatus), Swan Coastal Plain, (photograph taken in the Perth suburb of Hamersley)*  
*Protected under Migratory Bird Agreements. (John Dell Terrestrial Ecosystems Section, EPA Service Unit)*

Swan Bioplan is a Cabinet endorsed four year regional biodiversity program designed to update regional biodiversity conservation recommendations, promote ecological sustainability and the integration of natural heritage values into regional development on the southern Swan Coastal Plain.

Swan Bioplan will review and update the remainder of the long-standing EPA System 6 and System 1 recommendations for conservation on the Swan Coastal Plain, after *Bush Forever* replaced the System 6 recommendations for the Metropolitan portion of the Swan Coastal Plain. It will also update recommendations for conservation on the Darling and Whicher Scarps.

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The southern Swan Coastal Plain region is a priority for biodiversity conservation planning. More than 80% of the population in Western Australia, live on the Swan Coastal Plain and the region is expected to continue to be a focus of future population growth and land use development pressures in the state. Despite this, it retains very significant conservation values, including a series of Ramsar listed wetlands that are internationally significant in their own right, and is part of the South-West Botanical Province, one of the worlds recognised mega-diverse regions and a centre for plant and animal endemism.

The EPA has for a number of years identified the need for a review of regional biodiversity conservation, including in its assessments of the Peel Region Scheme and the Greater Bunbury Region Scheme.

Swan Bioplan will use EPA criteria for identifying regionally significant natural areas, which are based on established, state endorsed national criteria for the conservation of Australia's biological diversity. These criteria were developed in EPA Bulletin 1108, reviewing the Greater Bunbury Region Scheme (2003). They were adapted to the wider Swan Coastal Plain region in EPA Guidance Statement No 10 (2003) *Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region*. Region wide consistency in defining conservation values of the Swan Coastal Plain will be maintained through the use and further development of a common series of data sets that will enable a consistent consideration of values with those in Bush Forever.

The project is being coordinated by the Strategic Policy Division of the Department of Environment and Conservation (DEC). While Swan Bioplan is a DEC (rather than EPA) project, the EPA, along with the WA Planning Commission, Conservation Commission of Western Australia and WA Local Government Association, will consider draft reports for release for public comment and review the final report prior to presentation to the Hon Minister for the Environment and Cabinet.

### **Peel Harvey Water Quality Improvement Plan**

The Peel Harvey region has a fast growing regional population, a new rail system being built between Perth and Mandurah, and growing stresses on its waterways. The estuary is renowned for its recreational, commercial and scientific values. The estuary is also a significant waterbird habitat and an internationally recognised wetland.

Before construction of the Dawesville Channel in 1994, the only outlet from the estuarine system to the sea was the narrow Mandurah Channel at the northern end of the Peel Inlet. This meant that when water quality in the system was poor, due to high nutrient levels discharged from surrounding properties, the resulting algal blooms choked the estuarine waters. After decades of declining water quality and severe algal blooms in the Peel-Harvey estuary a number of strategies were initiated in 1989. These included constructing the Dawesville Channel, harvesting nuisance macroalgae, and preparing and implementing an

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environmental protection policy and catchment management plan.

A 2003 review by the EPA found that the Dawesville Channel had been generally effective in reducing algal blooms in the open waters of the estuary, but found no appreciable improvement in the quality of water discharged from the catchment. As a result, water quality remains poor and algal blooms, fish kills and water scumming occur, particularly in the lower reaches of the Serpentine and Murray Rivers. These lower reaches are also prime locations for new urban developments.

In late 2003 the Peel Harvey Coastal Catchment Project was initiated to develop management measures to protect the estuarine waters from the impacts arising from land-based activities. It is a component program of the Natural Heritage Trust to achieve targeted reductions in pollution discharges in coastal and urban water quality hotspots. The program invests in the development of a Water Quality Improvement Plan that is prepared in accordance with the Australian Government's *Framework for Marine and Estuarine Water Quality Protection*.

The Water Quality Improvement Plan for the Peel Harvey estuarine system is being prepared by the EPA in partnership with the Commonwealth, State agencies including the Departments of Environment and Conservation, Water and Agriculture, Peel Development Commission and Peel Harvey Catchment Council.

The Draft Plan takes the findings of seven supporting research projects and recommends a combination of management actions to reduce

phosphorus discharges to estuarine waters. It also recommends a framework to enhance water quality through the land use planning processes for the Peel Harvey Catchment.

The supporting research projects found that nearly 70% of phosphorus discharge to the estuary comes from agriculture, mostly from cattle grazing particularly in the Harvey and Serpentine catchments. Of major concern, the scientific findings found that urban areas (currently located on about 6% of land area) contribute more than 20% of phosphorus discharges—but with escalating regional growth this figure is likely to escalate as new urban areas are attracted to the estuary where unchecked discharges will quickly reach the estuary.

The Plan sets out best practice management measures needed to reduce phosphorus discharges and resulting algal blooms and improve the long term ecological health of waterways. It builds on the catchment management activities and research that have been on-going for decades. These include measures that use a coastal fertiliser and soil amendment, connect to sewer or upgrade to alternative on-site septage systems, use water sensitive design technology in new developments, remove point source discharges, and use perennial pastures where warranted.

The Draft Water Quality Improvement Plan will be released for public consultation in the third quarter, 2006. During the three month consultation period, the EPA will seek the community's views on matters such as the level of protection that the community wants for various areas of the waterways, and selection of effective management measures and control



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actions to achieve this level of protection. The EPA expects to deliver its recommendations to the State Government by the end of 2006.



*The Western Underground Orchid (Rhizanthella gardneri) is a very rare and unique orchid. (Photograph taken near Munghlinup). (Mark Brundrett, Terrestrial Ecosystems Section, EPA Service Unit).*

## ENVIRONMENTAL ASSESSMENT OF PROPOSALS

The EPA assessed a diverse range of development proposals covering resource development, industrial processing, infrastructure and land use developments, as well as planning schemes and amendments.

A total of 471 development proposals and planning schemes were referred to the EPA for consideration, similar to last year. Of these, the EPA determined that 59 proposals required formal assessment, reporting and providing recommendations to the Minister for the Environment. This was a 25 per cent increase over last year, and reflects the substantial increase in development proposals, especially in the resource sector. A further 188 did not require assessment but specific advice was provided to proponents and approval agencies.

During the year, 39 formal assessments were completed. The Level of Assessment for each proposal or planning scheme depends on the significance of the environmental impacts. The number of assessments completed in each Level of Assessment categories in 2005-06 is shown in Table 2. A list of all assessments completed is set out in Appendices 2 to 5. Some of the more significant assessments are discussed below, preceded by a brief discussion of some overarching issues in relation to the environmental assessment process.

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## Demonstrating Environmental Acceptability

The environmental impact assessment (EIA) process is predicated upon a proponent being responsible for demonstrating that a proposal is environmentally acceptable. During the process the EPA works with the proponent to assist in identifying what are the environmental issues that need to be addressed and indicating what is considered acceptable for the project.

or supporting their environmental documents.

Environmental review documents prepared by the proponent need to:

- describe the potential impacts on the environment of the proposal;
- show that ‘best practicable’ steps will be taken to avoid and minimise impacts;
- commit to appropriate actions and measures to manage impacts and to mitigate for unavoidable

***Table 2: Environmental Protection Authority’s Completed Assessments in 2005-06***

Level of Assessment	Assessments
Environmental Review and Management Program (ERMP)	3
Public Environmental Review (PER)	9
Planning Scheme Environmental Review (ER)	2
Consultative Environmental Review (CER)	1
Environmental Protection Statement (EPS)	8
Assessment on Referral Information (ARI)	9
Formal under Part IV	0
Proposal Unlikely to be Environmentally Acceptable (PUEA)	0
Section 46 Change to Conditions	5
Section 16 Strategic Advice	2

An important part of the process is the proponent undertaking the necessary environmental studies and surveys and preparing the environmental review document.

Surveys should be well scoped, timely, competent and comprehensive. They provide key data that informs siting, design and approval considerations. The EPA has prepared a number of guidance statements (Appendix 7) that outline survey requirements to assist proponents and consultants in meeting the requirements for information included in

environmental losses resulting from the proposal; and

- justify the proposition that the impacts of the proposal, both individually and collectively, should be judged by the EPA to be environmentally acceptable.

The EPA recognises that, in some circumstances, proponents will not have advanced sufficiently with the design of the project and selection of technology to demonstrate best practicable measures during the EIA process. In these circumstances, the EPA expects that proponents will commit to demonstrating ‘best practicable’



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measures, both during the design phase of the project and before an application for Works Approval is submitted. This commitment would then become part of the conditions of approval for the project.

The EPA accepts that it is not always possible for proposals to avoid all impacts on biological and physical systems. However, where impacts are unavoidable, the EPA does expect proponents to develop appropriate mitigation measures as part of their proposal.

In January 2006 the EPA published Position Statement 9, *Environmental Offsets*, (Appendix 6 provides a list of Position Statements) that was finalised after two rounds of formal consultation and following feedback from public forums convened by the Environmental Consultations Association (WA) and the National Environmental Law Association (WA Division).

This Position Statement has aroused substantial interest because it articulates a policy position regarding the application of offsets in environmental decision making.

The Position Statement will provide the basis for a whole of government environmental offsets policy as well as being augmented by a specific Guidance Statement on the subject

Mitigation measures are usually outlined in the environmental review document and described in more detail in environmental management plans (EMPs). An important issue is when is the most appropriate time for EMPs to be prepared. The EPA believes that proponents should only be deferring

details of matters that are relatively routine and certainly not significant in relation to whether a proposal should be approved. As a consequence, the EPA will ensure that the assessment scoping identifies those issues that should be addressed in some detail, including management measures, in the environmental review document. Some proponents prepare draft EMPs and include them in their environmental review document, with the intention of informing all stakeholders and the EPA of their management objectives, approach and options. The EMP is then finalised after project approval has been given. This approach is encouraged by the EPA

The EPA is continuing to encourage proponents to establish peer review panels of specialists to provide guidance in the environmental studies and review environmental documents before submission to the EPA and release for public comment.

The EPA strongly encourages meaningful consultation by proponents with relevant public and government agency stakeholders during the preparation of their environmental review documents, as part of best practice EIA. This consultation should continue through project implementation and operation, and decommissioning where this is relevant. Establishing an on-going relationship with stakeholders, including aboriginal people, is important. It is the EPA's experience that when proponents clearly embrace the EIA process and their responsibility to define and manage the impacts of a proposal (considering the proposal in a broader bioregional, ecosystem, and social surroundings context) the EIA process is more timely, less burdensome

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with a higher quality project in terms of environmental outcomes achieved.

### **Timelines for Environmental Impact Assessment of Proposals**

The EPA recognises that proponents are usually keen to obtain environmental approval for the projects as early as possible to assist with establishing 'bankability' for the projects. However, proponents need to appreciate that the EIA process is an important one in demonstrating the environmental acceptability of projects, and that adequate time must be allowed for the necessary surveys and studies to be undertaken, for public input and government agency review, and for the EPA to evaluate the impacts and to provide its report and recommendations to the Minister for the Environment. Time must also be allowed for the Minister for the Environment to consider any appeals against the EPA's report, and to consult with other Ministers and decision-making authorities regarding Ministerial Conditions of approval.

While the EPA is continually seeking to improve timelines for assessments, adequate time must be allowed to undertake responsible EIA. The EPA's experience is that, generally, where proponents allow adequate time in the project feasibility and planning stage to undertake thorough EIA studies, consult with the community and evaluate ways to minimise and mitigate the environmental impacts of the project, progress through the EIA process is expedited and the overall development schedule is met.

Where a proponent seeks to compress the period for undertaking environmental

assessment and consultation, difficulties often arise during the review by government agencies and the EPA's evaluation, such that the EPA's reporting to the Minister for the Environment is delayed.

Table 3 indicates the mean time and range of times taken to complete assessments for major projects in 2005-06 compared with previous years. The data shows that timelines for the assessment of projects completed in 2005-06 increased significantly, primarily as a result of proponent's taking much longer to submit their environmental review documents following the setting of Level of Assessment. Proponents for two projects each took more than four years to prepare their environmental review documents. The timeframe for the EPA's reporting from the end of the public review process was consistent with previous years but was longer on average than last year. The data continues to highlight that for major project assessments, proponents need to allow 1 to 1½ years to undertake the necessary studies and prepare the environmental review documents, for the public review period and response to issues arising from the public review and the EPA's assessment with the publication of its report and recommendations to the Minister for the Environment. It also highlights that the assessment of some projects can be significantly delayed due to issues that are more related to project economics than environmental issues, but which have a major effect on timeframes.

Since 1999, the EPA has provided two streamlined assessment processes for proposals where the impacts were expected to be reasonable and

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manageable. These are now referred to as 'Assessment on Referral Information' (ARI) and 'Environmental Protection Statement' (EPS). During the year, eighteen projects were assessed under these streamlined processes (see Appendix 3). This continues the trend over recent years of more proposals being assessed as ARI or EPS. Where a project is subject to one of these levels of assessment, the EPA expects the proponent to have consulted with the community and government agencies while undertaking environmental studies and preparing the environmental document, and to have addressed issues raised, so that once the EPA has received the environmental document there is no need for a formal public review period. Under these circumstances the EPA aims to provide its report and recommendations to the Minister for the Environment within 10 weeks of receiving the proponent's final environmental document. Table 3 indicates that the EPA normally completed its report well within that time.

For projects that are suitable for assessment through these streamlined processes, the EPA's experience has been that this has significantly reduced project timelines over what would be required for the full EIA process. To assist in better communication and reporting of timelines for EIA, the EPA has been placing project-specific timelines on its website, so that proponents and the community can identify the current stage of a project in the assessment process. This also provides advanced notice of timing for the next step in the assessment. In addition, the EPA includes in its assessment reports the timeline taken for

each phase of an assessment and the total time taken.

The EPA continues to implement relevant recommendations from the 2002 Independent Review Committee's Review of the Project Development Approvals System (the Keating Review). This review made a number of recommendations which directly or indirectly affect the EPA's assessment process for State Development portfolio projects. Two major thrusts have been the desire to improve timeliness of approvals and also to reduce duplication of requirements. The EPA has strongly supported initiatives to address both of these issues through the development of administrative time limits on the key steps in the formal assessment process.

The effective implementation of the Keating Recommendations has implications on resources. This was highlighted in the Keating Review and has been acknowledged by the State Government, with additional funding being made available to assist the EPA in meeting the assessment timelines for State Development portfolio projects.

## **Strategic Environmental Assessment**

The *Environmental Protection Amendment Act 2003* introduced the concept of a strategic proposal. This is defined in the following terms:

*A proposal is a "strategic proposal" if and to the extent to which it identifies –*

- (a) *a future proposal that will be a significant proposal: or*
- (b) *future proposals likely, if implemented in combination*

**Table 3: Timelines for major projects (in weeks)**

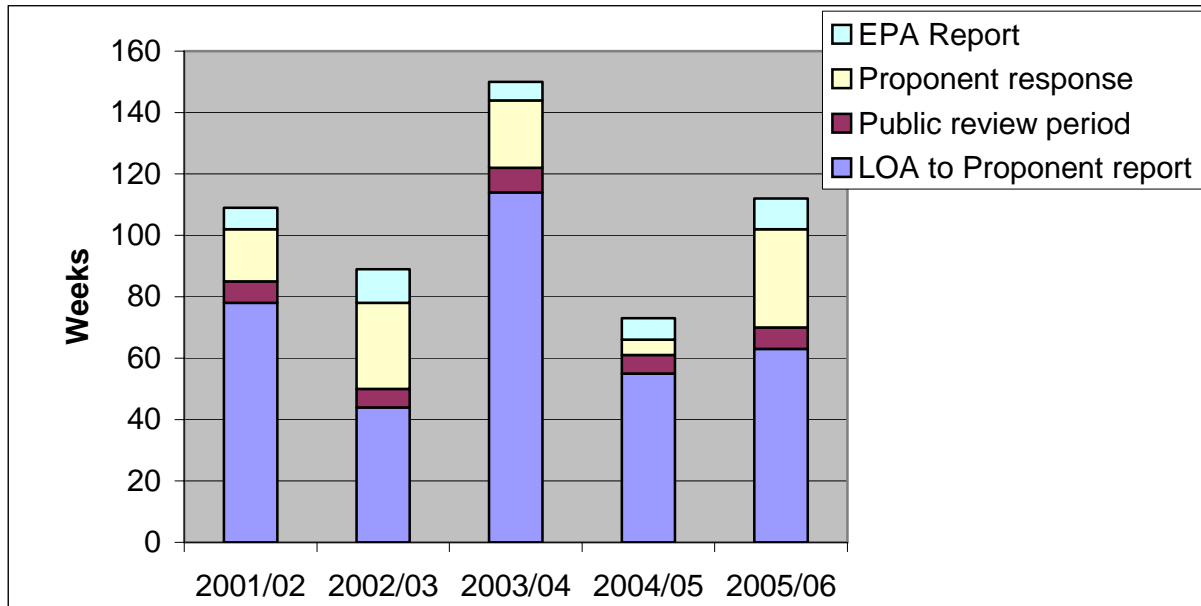
Assessment Phase		2001/02	2002/03	2003/04	2004/05	2005/06
From Level of Assessment set to proponent report release+	Mean	78	44	114	55	63
	Low*	16	4	29	9	12
	High*	291	187	240	223	209
Public Review Period	Mean	7	6	8	6	7
	Low*	2	4	4	4	4
	High*	12	11	10	8	16
End of Public Review period to proponent response to EPA+	Mean	17	28	22	35	32
	Low*	1	3	6	5	2
	High*	36	82	45	149	266
Proponent response to EPA report release	Mean	7	11	6	7	10
	Low*	1	3	2	3	4
	High*	15	39	11	23	27
Total, from level of assessment set to EPA Report	Mean	109	90	149	103	114
	Low*	29	22	54	25	22
	High*	313	271	295	273	335

\* Represent extremes across separate projects. Total is not cumulative.

+ This part of the process is largely under proponent control.

This is represented graphically in the following figure, which shows the average periods taken for each stage of the assessment process over the period 2000/01 to 2004/05.

**Figure 1: Average time taken for the assessment of proposals over the past five years.**



- (c) *with each other, to have a significant effect on the environment.*

It should be noted that a strategic proposal cannot be referred by a decision-making authority or a third party nor can it be called in by the EPA. It is a voluntary referral by the proponent, which is appropriate given they will need to undertake investigations and consultation to address environmental issues that may be substantial and complex. This assessment is a Strategic Environmental Assessment.

Assessment of a strategic proposal by the EPA will be a 'formal' assessment. This means that most of the provisions set out under Part IV (Divisions 1 and 2) of the EP Act must be met, including an EPA report on environmental factors relevant to the proposal as well as conditions and procedures that should apply to any environmental approval, Ministerial decision and appeals.

Consistent with the evolutionary development of environmental impact assessment in Western Australia since the early 1970's, the EPA believes that it is best to trial this new assessment of strategic proposals over some time under a philosophy of continuous improvement before the finalised process is articulated through administrative procedures. The EPA will therefore provide for a level of adaptation and variation to the assessment process for strategic proposals until it is confident that the process is effective. However, there needs to be guidance for proponents and the community about the EPA's current intentions.

Where a strategic proposal will lead to a significant proposal in the future, and the strategic proposal is well defined and is

implementable, the Strategic Environmental Assessment process will be consistent with Environmental Review and Management Program (ERMP), as outlined in the 2002 Administrative Procedures.



*Jan's Banded Snake* (*Vermicella bertholdi*). (John Dell Terrestrial Ecosystems Section, EPA Service Unit).

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## MAJOR PROJECTS

The EPA's mission is to ensure that environmental issues are examined thoroughly and transparently, and then avoided, mitigated or managed properly when proposals are developed.

The EPA is very aware that timeliness and certainty are important to proponents. Proposals can effectively avoid or mitigate environmental impacts without significant time or cost penalties if they consider environmental issues early in project design. The EPA can assist if proposals are referred to the EPA early in their development. Environmental impact assessment (EIA) then ensures that the environment is protected when new developments are planned and implemented.

The EPA received additional resources from Government this year and was able to routinely deliver on the benchmarks set for it by the Keating process. The EIA process adds value to a project by ensuring it properly protects the environment in a way that is transparent, robust and defensible. To do this effectively, the EPA relies on proponent's delivering quality documents supported by sound science, thorough analysis and comprehensive management responses.

This year the EPA has dealt with a large number of projects as a result of the resources boom. As well as resources projects themselves, this boom has also resulted in a significant number of new land use planning, basic raw materials and infrastructure projects to support the demand for land, housing and other services.

The EPA sets environmental objectives but allows proponents to develop the solutions to meet those objectives. Each

year a number of assessments provide significant insight into issues of environmental policy or demonstrate innovative approaches to solving environmental problems.

A number of assessments that illustrate these points are outlined below.

### Gorgon Gas Development



*Juvenile Flatback Turtle (Natator depressus). **Conservation Status** Commonwealth: Vulnerable (Environment Protection and Biodiversity Conservation Act 1999) Queensland: Vulnerable (Nature Conservation Act 1992) Western Australia: Vulnerable (Wildlife Conservation Act 1950). Flatbacks have the smallest migratory range of any marine turtle species which means that the Flatback is vulnerable to habitat loss, especially breeding sites. (K Howard: Department of Environment and Heritage website).*

On 6 June 2006 the EPA released Bulletin No 1221 on the proposal by Chevron Australia to construct the Gorgon Gas Development on Barrow Island Nature Reserve.

Barrow Island has been a class A nature reserve since 1910 in recognition of the unique and important conservation values there. Over 24 species on Barrow Island occur nowhere else.



The Gorgon Gas Development would involve 3300 construction workers, up to 300 hectares of clearing on Barrow Island, 7.6 million cubic metres of dredging and many times more movements of people, materials, equipment and food than the oil field operations now on the island.

Barrow Island supports a significant regional population of flatback turtles. The beaches nearest to the plant and either side of the proposed materials offloading facility are the most important on Barrow Island for flatback turtle nesting.

Project lighting poses an unacceptable risk because it deters turtles from nesting and lights on the jetty and LNG ships would lead to disorientation and increased predation of hatchlings.

The scale and duration of dredging poses an unacceptable threat to corals and other seabed habitats, as well as contributing to the risk of deaths of flatback turtles and other marine fauna.

The increased scale of impact and activity on Barrow Island presents an unacceptable risk that non-indigenous species would be introduced. Introduced species could drive threatened species on Barrow Island extinct, as has happened on the mainland.

Up to seven species of subterranean fauna and two terrestrial invertebrates have so far only been found on and beneath the plant site. If they do not occur elsewhere, it is likely that construction and operation of the plant will render those species extinct.



*Burrowing Bettong or Boodie, (Bettongia Lesueur). **Conservation Status** Commonwealth: Vulnerable (Environment Protection and Biodiversity Conservation Act 1999); Western Australia: Rare (Wildlife Conservation Act 1950). With about 5,000 burrowing bettongs on Barrow Island and no natural predators this is the only secure population. It is also the only macropod to use warrens.*

This proposal will result in a minimum of 4 million tonnes per annum of greenhouse gases being added to Western Australia's emissions. This quantity of carbon dioxide would not be offset. The capacity to avoid releasing even more greenhouse gas, by injecting and storing carbon dioxide from the reservoir gas beneath Barrow Island, was a key environmental reason for the proponent choosing Barrow Island for the gas plant.

It is still not certain that the proponent will be able to practically store carbon dioxide beneath Barrow Island. The EPA considers that it would be unacceptable if a high percentage of the reservoir carbon dioxide was not injected or otherwise offset.

The EPA has recommended that from an environmental point of view, the proposal should not be permitted to proceed as proposed on Barrow Island.

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## Alcoa Wagerup Unit 3 Expansion

Alcoa World Alumina Australia proposed to expand the Wagerup refinery through construction of a third production unit. The proposed production increase was from 2.4 to 4.7 million tonnes per annum (Mtpa) of alumina, thus approximately doubling the production capacity.

The existing refinery was commissioned in 1984 and is located in a rural setting near the small country town of Yarloop. For many years the local community and the refinery coexisted without complaint; however, since an increase in production rate and commissioning of a liquor burner in 1996 (initially without adequate pollution control) there have been serious public concerns over the emissions from the refinery, and reports of health impacts and noise problems. Although the refinery later installed a number of emission controls, the community complaints continued and ultimately led to a public inquiry referred to as the *Legislative Council Standing Committee Inquiry Report on the Alcoa Refinery at Wagerup (2005)*.

The inquiry report noted that the Wagerup Medical Practitioner's Forum (a medical forum made up of independent medical practitioners and representatives from Department of Health (DoH), convened in 2001 to investigate health problems near the Wagerup refinery) testified that there was considerable weight of medical opinion that there was a medical problem, but noted that it did not have a specific chemical as a causal target for which a solution could be developed or regulated.

Ambient air monitoring at Yarloop demonstrated that air quality meets all

relevant national and international guidelines, but there were public concerns that short term spikes in air contaminants, were not adequately identified by the monitoring and modelling techniques and that health guidelines may not adequately consider either the combined effect of pollutants or short term spikes.

The Standing Committee expressed the belief that some people are more susceptible to experiencing adverse health effects from emissions than others and considered that the operations of the Wagerup refinery liquor burner during 1996 could have been responsible for trigger events that led to multiple chemical sensitivity (MCS) in some individuals. Unfortunately MCS is still not a condition that is well understood and nothing more definitive could be stated.

Although there was a the lack of certainty in relation health impacts, there was certainty in regard to noise impacts. Alcoa was unable to meet the Noise Regulations in the northern sector of Yarloop where the 35 dB(A) limit was occasionally exceeded at night. Alcoa began to offer to purchase properties above the unaffected market value, within the area where the noise limit was exceeded, so that those who wished to could relocate. This area came to be referred to as Area A.

Alcoa later recognised the case of concerned Yarloop residents who lived near Area A and considered that their property values were lowered due to proximity to it. Alcoa agreed to maintain the market value by buying properties at the unaffected market value in this outer area. This area, which included most of southern Yarloop, come to be referred to as Area B.



Unfortunately the different financial arrangements for householders, depending on their address in relation to the Area A/Area B delineation, were perceived as unfair by many residents, particularly as there was widespread fear of health impacts from refinery emissions in both areas. There were a number of residents reporting health impacts well outside of Area A. Besides these things, many families had lived in the area for generations and were concerned about the future the Yarloop community.

When Alcoa announced its new proposal to build a third production unit in order to approximately double the Wagerup refinery production rate, the community was already suffering from fear of health impacts from existing emissions and uncertainty as to the future of Yarloop and controversy was inevitable.

Due to the complexity of the issues, the EPA set a level of assessment at Environmental Review and Management Programme.

The DoH advised the EPA that, on the basis of the Health Risk Assessment, emissions from the refinery should not present an abnormal health risk for the general community. The DoH also advised that it considered that it would be inappropriate to arbitrarily introduce new “protection of MCS” guidelines for emissions, some order of magnitude below current National/International air quality health standards, to address the issues outlined above. This was because setting new, arbitrarily low guidelines for emissions may not prevent continued occurrence of health issues for people affected.

The DoH advice to the EPA recommended establishment of 5 km minimum health management zone in

which persons who experience health impacts should be assisted to relocate. The DoH further advised that it would be inappropriate to declare a large “no residents” zone of influence around the Refinery as, while some people have been impacted, the majority of residents are not experiencing health issues.

In Bulletin 1215 released in January 2006 the EPA recommended that a stringent set of Ministerial Conditions be applied if the proposed expansion is to proceed in order to provide confidence that health related incidents do not increase due to the proposal and that a process to care for the interests of persons currently experiencing health concerns is put in place.

The EPA also provided a comprehensive set of requirements which it considers need to be applied as a package if the project is to proceed. These requirements were:

1. Demonstration that there would be no general increase in ambient ground level concentrations for key pollutants from the Refinery, consistent with the predicted ground level concentrations presented in the Environmental Review and Management Programme (ERMP).
2. Best practice to be applied in design, selection, installation and commissioning of pollution control equipment integral to the expansion to minimise emissions from the Refinery. This should be subject to review by an expert Independent Design Review Team, established in consultation with Alcoa, during the design phases leading to Works Approval application.
3. A technically sound, independently monitored

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- program to be agreed for commissioning performance verification to demonstrate emissions meet those proposed.
4. Key recommendations from previous reviews and investigations, particularly those of the CSIRO 2004 Air Quality Review, to be completed in parallel with the design phases of the expansion.
  5. A comprehensive ambient air quality monitoring and reporting program to be established for the area.
  6. A baseline health survey, independently managed by the DoH, to be undertaken in the area within twelve months of approval being granted.
  7. A Government land use strategy to be developed and implemented for the area prior to construction commencing, in association with Alcoa's land use strategy, to ensure compatible land uses in the vicinity of the Refinery.
  8. Periodic follow-up independent health surveys, following implementation of the expansion to monitor community health issues.
  9. Establishment of an independent process for assessment and diagnosis of any persons reporting health symptoms attributable to operation of the refinery.
  10. Establishment of a process to enable persons who have been professionally/independently assessed to be experiencing chemical sensitivity symptoms to relocate from the area without personal disadvantage.

At the time of writing appeals on the EPA's report had yet to be finalised.

## **Worsley Alumina Expansion of Operations**

Worsley Alumina Pty Ltd (Worsley) proposed to upgrade the Worsley refinery near Collie in order to increase production to 4.4 million tonnes per annum (Mtpa). At the time, Worsley had approval under Part IV of the *Environmental Protection Act, 1986* for production of 3.7Mtpa, and the refinery was operating at 3.25Mtpa. The proposed refinery production rate required an increase in the rate of mining from 13.2Mtpa (dry) to approximately 16.5Mtpa (dry).

The mining part of the proposal (on the eastern side of the Darling Scarp) was to extend the existing mine extensively into new areas, resulting in an increase in annual ground disturbance and rehabilitation from about 140 hectares per annum (ha/a) to about 240ha/a. The proposed new mining areas would be situated within areas of State Forest, remnant vegetation on farmland and in cleared farmland. This increase in mining area was controversial, especially in view of the complexity and significance of the jarrah forest biophysical issues, and the assessment was thus carried out as an Environmental Review and Management Programme (ERMP).

The EPA noted that none of the proposed mining envelopes are in areas which are proposed to be reserved for conservation. Notwithstanding this, the EPA considered that the proposed clearing and mining has potential to have significant impact on the environmental values of the State Forest if not planned, investigated, managed, and rehabilitated to a very high standard.

The EPA noted the results of the flora and fauna surveys carried out for the

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assessment, but considered that there was a need for long term comprehensive investigations to be undertaken in order to establish a better understanding of biodiversity and ecosystem function, particularly in relation to the drying climate trend.

Taking into account that mining access to the new areas would not be required for at least a decade and that there were no apparent fatal flaws in the proposal, the EPA recommended in Bulletin 1209 of November 2005 a staged approach to achieving final sign-off of mining areas.

Recommended Ministerial Conditions required Worsley to undertake comprehensive biodiversity related investigations which focus on the areas within and near to the proposed new mining areas, and to prepare a Biodiversity Investigations Report. A process was set out in the recommended Ministerial Conditions to require review of the scope of the Biodiversity Related Investigations by relevant Government agencies and a Stakeholder Consultation Group prior to carrying out the studies. When eventually completed, the Biodiversity Related Investigations Report would be made publicly available. However, mining exclusion criteria, which would be applied once the biodiversity related values were clearly established, were set out up-front in the recommended Ministerial Conditions. Finally, the recommended Ministerial Conditions required Bauxite Mining Plans to be prepared and to be reviewed by an independent auditor so as to demonstrate how the key biodiversity values identified in the Biodiversity Investigation Report will be protected. The final Bauxite Mining Plan must be made publicly available and will be subject to the approval of the Minister for the Environment.

The sustainability of ecosystem and hydrological function following rehabilitation was recognised as being critical. A process with requirement for a research program prior to development of a formal Rehabilitation Plan was set out in the recommended Ministerial Conditions. The Rehabilitation Plan would need to meet certain criteria to demonstrate the sustainability of the rehabilitated forest. It would need to be peer reviewed, approved by the Minister for the Environment and made publicly available.

The recommended Ministerial Conditions also required Worsley to undertake detailed salinity and water resource management assessments prior to commencing clearing in any mine area. This included development of predictive tools to estimate the extent of water table rise and any impacts on salinity. The water resource management plan proposed by Worsley is to include upper-limit criteria for salinity which must be demonstrated to be achievable through the modelling and other assessment. These criteria would relate to both water use and protection of stream ecosystem.

The proposed mining extension area covers a small area of a number of public drinking water catchments. Close consultation is to be maintained with the Water and Rivers Commission and the Water Corporation on the detailed salinity and water resources assessments in these areas. The assessments will need to demonstrate that there is negligible risk of adverse water quality impacts in these areas, prior to mining being allowed. Particular consideration also needs to be given to rehabilitation of any areas mined in the drinking water catchments to manage long-term stream flow rates.

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The EPA recommended a Ministerial Condition requiring the proponent to not carry out any ground disturbing activities in areas proclaimed as water reserves or catchment areas under the *Metropolitan Water Supply, Sewerage, and Drainage Act, 1909*, or the *Country Areas Water Supply Act, 1947*, prior to the preparation of a Water Resource Management Plan for mining. The Water Resource Management Plan needs to demonstrate that the activities are likely to have negligible impact on the quality of water supplies from the catchment.

The EPA considered that the refinery expansion proposal demonstrated the implementation of best practicable technology by the proponent in relation to minimising the discharge of atmospheric emissions. The refinery will use low NO<sub>x</sub> burners, flue gas desulphurisation, and baghouses to minimise NO<sub>x</sub>, SO<sub>2</sub>, and particulate emissions respectively.

Cumulative air dispersion modelling for the Collie air shed, which included proposed and existing power stations in the Collie area, indicated that cumulative NO<sub>x</sub>, SO<sub>2</sub>, and ozone ground level concentrations will not exceed the relevant NEPM standards. Maximum 24-hour average PM<sub>10</sub> ground level concentrations due to the refinery in isolation are predicted to be well below the NEPM standard at all receptors. Air toxics were also predicted to be low.

The proposed expansion will not require an increase in the Bauxite Residue Disposal Area (BRDA) footprint. Cumulative modelling indicated that the proposed expanded refinery and the BRDA's do not significantly contribute to predicted exceedances of the 24-hour PM<sub>10</sub> and PM<sub>2.5</sub> NEPM standards at a number of sensitive receptors. The

predicted exceedances are predominantly due to emissions from the existing power stations in the Collie area.

The EPA noted that the health risk assessment (HRA) concluded that there is a good degree of confidence that emissions from the refinery are very unlikely to cause direct acute or chronic health effects on the surrounding population, and that the Department of Health concurs with this conclusion.

The EPA noted that noise modelling for the proposed refinery expansion predicts that noise levels at the nearest residences will comply with the assigned noise levels under the *Environmental Protection (Noise) Regulations, 1997*. Modelling also indicated that noise emissions from the existing conveyor will comply with the Agreement Act following the expansion, and that no noise sensitive premises are currently located within the predicted 35dB(A) noise contour of the proposed new conveyor system.

Cumulative noise levels are predicted to rise in the vicinity of the Worsley-Brunswick, Collie-Worsley, and Brunswick-Bunbury railway lines as a result of the increased number of rail movements that would be required for Worsley's proposed expansion. A review of the ERMP noise assessment found that the increase in noise during the day due to extra train movements for Worsley's expansion was unlikely to be significant. However, the increase during night-time may be significant between Worsley Siding to Brunswick Junction and Brunswick to Bunbury. The review determined that it would be useful to obtain additional information on maximum noise levels and how frequently they occur during night-time for the different sections as sleep disturbance may possibly become an

issue with the proposed expansion. The review also determined that a more detailed analysis is required to examine the distance to residences along the length of the railway and to consider the impact of other projects and the changing conditions along the track, including topography and train operation (notch settings, length, and locomotive type etc).

The EPA recognised that rail traffic on jointly used sections of the railway line will also increase due to similar refinery expansions at Alcoa's Pinjarra and Wagerup refineries and recommended that a joint working group comprised of the rail users, the rail operator and relevant government agencies be established to investigate and mitigate the combined rail impacts.

### **Iron Ore Development in the Mid-West / Yilgarn region**

In response to market demand for iron ore in China, there has been a significant increase in interest in development of iron ore mines in the Mid West / Yilgarn region. A number of companies are actively exploring in the region and the Mount Gibson Iron Ore Mine and Gindalbie Metal's Mungada Ridge Haematite Mine are currently under assessment by the EPA.

#### ***Bulletin 1220: Jack Hills iron ore proposal, Murchison Region.***

In May 2006, the EPA released its report and recommendations on Murchison Metals' proposal to develop an iron ore mine at Jack Hills, 100 kilometres west of Meekatharra. The proposal involved mining 8.2 million tonnes of ore above the water table, and was assessed at the level of Environmental Protection Statement (EPS).



*EPA site visit to Jack Hills, March 2006.*

The key environmental factors identified in the EPA report were vegetation and flora, fauna and closure planning, landforms and rehabilitation. The EPA considered that the proposal was environmentally acceptable subject to the implementation of the following Ministerial Conditions: environmental induction and training for employees and contractors; vegetation management; fauna management; and appropriate decommissioning and closure.

The proponent is currently developing a proposal for a larger scale iron ore mine and railway in the same area that will require careful consideration by the EPA of potential cumulative impacts on vegetation, flora and fauna.

There is potential that electromagnetic emissions from vehicles and radios used for the mining project may interfere with preliminary testing work being carried out for the proposed Square Kilometre Array project. The Department of Industry and Resources is liaising with the CSIRO and with Murchison Metals to resolve these issues.

At the time of writing appeals on the EPS level of assessment and the EPA's recommendations had yet to be determined.

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### ***Yilgarn Iron Ore Environmental Committee***

Many of the banded iron formation hills in the Mid-west / Yilgarn region have significant conservation values. Many of these hills form isolated biogeographic “islands” in the landscape and, for that reason, unique plant species and distinctive plant communities occur. There is also evidence that species of invertebrates (so-called “short range endemics”) are restricted to particular hills or ranges of hills. In addition, there are significant environmental issues in terms of strategic planning for transport and infrastructure to support development of an iron ore industry in the region.

For these reasons an inter-departmental committee known as the Yilgarn Iron Ore Environmental Committee has been formed in order to provide whole-of-Government coordination in strategic planning and policy development relevant to the region. The committee comprises senior representatives from the EPA Service Unit, the Department of Conservation and Land Management (amalgamated with the Department of Environment to form the Department of Conservation and Environment on 1 July 2006) and the Department of Industry and Resources.

### **Assessment of Pilbara iron ore mining proposals**

#### ***Bulletin 1191: Hamersley Iron Dampier Port Upgrade to 120 MTPA***

Pilbara Iron proposed to expand its iron ore operations at Dampier Port from a throughput of 95 million tonnes per annum (Mtpa) to 120Mtpa. The port operations are located at two terminals; Parker Point and East Intercourse Island. The proposal was to increase the

capacity of the Parker Point terminal by the simultaneous operation of both the new car dumper circuit (currently under construction) and the existing car dumper circuit.

The EPA set the level of assessment at Environmental Protection Statement, and released its report and recommendations (Bulletin 1191) in August 2005. The key environmental factors identified in the EPA report were: dust and noise impacts on the townsite of Dampier and surrounds; and water use and management.

Dust dispersion modelling predicted that the increase in throughput is not expected to significantly increase dust levels in Dampier. The EPA considered that the proposed increase in throughput would be acceptable subject to the proponent implementing a Noise Management Plan to ensure all reasonable and practicable measures are undertaken to reduce noise emissions, and updating the Dust Management Plan to incorporate strategies to achieve an overall reduction in dust impacts on the town of Dampier.

#### ***Bulletin 1195: Yandicoogina Junction Southeast Mine, Mining Lease 274SA***

Hamersley Iron operates the Yandicoogina Junction Central mine, which produces iron ore from a channel iron deposit in the central Pilbara region. In September 2005, the EPA released its report and recommendations on Hamersley Iron’s proposal to expand mining of the channel iron deposit to include the Yandicoogina Junction Southeast Mine. The proposal included clearing of 669 hectares of vegetation and mining below the water table. The proposal was assessed at the level of Environmental Protection Statement.

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The key environmental factors identified in the EPA report were groundwater, riparian vegetation, flora and fauna. The EPA considered the proposal was environmentally acceptable, subject to the implementation of certain Ministerial Conditions including:

a Decommissioning and Rehabilitation Plan, which includes the identification of completion criteria; a Groundwater Management Plan to manage and monitor impacts on groundwater; a Riparian Vegetation Management Plan which includes a requirement to re-inject surplus water from dewatering into a downstream aquifer if feasible, to minimise impacts on riparian vegetation from dewatering discharge; conservation of significant flora and fauna, which includes additional pre-land clearing targeted surveys to identify or improve knowledge of the distribution of flora and fauna species of conservation significance and where possible adjust clearing boundaries to avoid disturbance. Hamersley Iron also committed to backfill the pit void to above the water table to minimise the build up of salinity in the groundwater.

***Bulletin 1202: East Pilbara Iron Ore & Infrastructure Project: East-West Railway and Mine Sites (Stage B)***

Fortescue Metals Group proposed to develop an iron ore mine north of the town of Newman, at Christmas Creek and Mindy Mindy, and construct a 111 kilometre railway system to connect the Christmas Creek mine to the railway to Port Hedland. The EPA assessed the proposal at the level of Public Environmental Review, and released its report and recommendations in October 2005.

The proposal required clearing of large areas of native vegetation, mining below the water table, large amounts of water

use for processing and dust suppression, and traverses areas of Mulga grove woodland and skirt parts of the northern edge of the Fortescue Marsh, which is a unique and high conservation value feature of the Pilbara.

The EPA considered that the proposal was environmentally acceptable, subject to the implementation of the proponent's commitments and recommended conditions. The conditions included: a Mulga and Other Flora Communities Management Plan; a Fauna Management Plan; a Fortescue Marsh Management Plan; a Borefield Management Plan; a Subterranean Fauna Survey Plan, which includes a Subterranean Fauna Management Plan if there is a risk of loss of subterranean fauna as a result of the project operations; a Surface Water Management Plan; a Rail Route Environmental Management Plan; and a Closure Plan. The proponent committed to an offset package directed at research into management of the Fortescue Marsh, and studies into threatened fauna (such as the Mulgara), Mulgas and Mulga water-plant relationships, and weeds.

***Bulletin 1203: Koolan Island Iron Ore Mine and Port Facility***

In the mid 1990s, mining of five pits on Koolan Island was completed by BHP. Aztec Resources proposed to re-open mining on Koolan Island by expanding on the previously mined ore bodies. The EPA assessed the proposal at the level of Assessment on Referral Information, and released its report and recommendations in November 2005.

Extensive soil contamination exists on Koolan Island as a result of previous mining activities. The proposal includes construction of a seawall to prevent access of sea water into the Main Pit,

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construction of a port facility, open cut mining from three pits, clearing of vegetation, and construction of associated mine infrastructure.

The EPA recommended that a set of stringent Ministerial Conditions be applied to the project to minimise impacts on the marine ecosystem, flora and fauna, and manage weeds and contamination on the island. These Ministerial Conditions include: a Closure Plan for decommissioning and rehabilitation of the project; a Marine Management Plan; conservation of significant flora and fauna, including Significant Species Management Plans where required; a Subterranean Fauna Survey Program, and Subterranean Fauna Management Plan where conservation significant species are found; a Quarantine Management Plan; a Contamination Management Plan; and an Asbestos Management Plan.

***Bulletin 1210: Orebody 25 Extension, 8km North East of Newman***

In November 2006, the EPA released its report and recommendations on BHP Billiton Iron Ore's proposal to expand existing mining operations at Orebody 25 mine, which is located in the central Pilbara region. The proposal was assessed at the level of Environmental Protection Statement.

Mining activities at Orebody 25 have involved development of hard rock Pits 1, 2 and 3. Pit 2 was decommissioned in the late 1990s. The proposed Orebody 25 Extension Project involved increasing the ore production rate from 7 Mtpa to approximately 8 Mtpa, by expanding mining in Pits 1 and 3. Under this proposal, Pit 3 would be expanded to below the water table and then backfilled to above the pre-mining water table post mining.

The EPA considered the proposal was environmentally acceptable, subject to the implementation of Ministerial Conditions for the conservation of significant flora and fauna, management of weeds and subterranean fauna, and appropriate decommissioning and rehabilitation of the mine.

***Bulletin 1214: Brockman Syncline 4 Iron Ore Project***

In January 2006 the EPA released its report and recommendations on Hamersley Iron's proposal to develop the Brockman Syncline 4 iron ore mine in the Central Pilbara region. The mine is located 25 kilometres south-west of the existing Brockman 2 mine. The main components of the proposal include: three mine pits; dry processing plant; associated mine infrastructure; extension to the Brockman 2 rail spur and an infrastructure corridor for power and water supply. The life of mine is approximately 30 years, yielding approximately 600 million tonnes of high grade ore. The EPA assessed the proposal at the level of Public Environmental Review.

The key environmental factors identified in the EPA report were: impact on a Priority 4 flora species, *Eremophila magnifica* subsp. *Magnifica*; impact on a new taxon of land snail (*Rhagada* sp. "Mt Brockman") and associated habitat; impacts on local aquifers from dewatering and abstraction; and the need for progressive rehabilitation based on the life of mine and large mine footprint.

The EPA determined that the project could be managed subject to implementation of Ministerial Conditions relating to: sampling of the rail spur and infrastructure corridor prior to ground disturbance for Declared Rare



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Flora and Priority flora and management of any identified species; protection of the unique land snail population and associated habitat; management and monitoring of groundwater resources; and progressive rehabilitation of the mining area. Hamersley Iron also committed to carry out works relating to rehabilitation research, stygofauna sampling, research of the genetics of the unique land snails, and backfilling of mine voids to above the standing water level.

***Bulletin 1216: Pilbara Iron Ore and Infrastructure Project: Cloudbreak***

Fortescue Metals Group proposed to develop an iron ore mine north of the town of Newman in the Pilbara Region at Cloud Break, to integrate with the previously assessed and approved Stage A and Stage B iron ore projects. The EPA assessed the proposal at the level of Public Environmental Review, and released its report and recommendations in January 2006.

The proposal includes clearing of 5,500 hectares of native vegetation which includes Mulga grove woodland and mining below the water table. The project area is upslope from and close to parts of the northern edge of the Fortescue Marsh, a unique and high-conservation value feature of the Pilbara. Disturbances to the surface water drainage as a result of the proposal, may change and adversely affect the distribution of water to Mulga groves downslope.

The EPA considered that the proposal was environmentally acceptable, subject to the implementation of the proponent's commitments and recommended Ministerial Conditions. The Ministerial Conditions included: a Mulga and Other Flora Communities Management Plan; a

Fauna Management Plan, which ensures protection of the Night Parrot and Bilby; a Fortescue Marsh Management Plan; a Groundwater and Bore Management Plan; a Subterranean Fauna Survey Plan, which includes a Subterranean Fauna Management Plan if there is a risk of loss of subterranean fauna as a result of the project operations; a Surface Water Management Plan; and a Closure Plan. The proponent committed to an offset package which included land acquisition and research into the Night Parrot, Bilby and improving understanding of local conservation values.

**Mineral Sands Proposals**

***Bulletin 1185: Gwindinup Mineral Sands Mine***

In July 2005, the EPA released its report and recommendations on the proposal by Cable Sands to mine mineral sands at Gwindinup, south east of Bunbury. The original proposal consisted of four ore bodies: Gwindinup North; Gwindinup South; Happy Valley North; and Happy Valley South. However, due to the need for further flora and vegetation surveys to be completed to determine the regional significance of the vegetation covering the Happy Valley North and South orebodies, Cable Sands withdrew these two orebodies from the proposal. The proposal was assessed by the EPA at the level of Consultative Environmental Review.

The key environmental factors identified in the EPA report were: vegetation and flora; fauna; water; and rehabilitation. The EPA considered the proposal was environmentally acceptable subject to implementation of the recommended Ministerial Conditions including: surveys for the Western Ringtail Possum (*Pseudocheirus occidentalis*), and relocation of identified possums; an

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Integrated Mining and Rehabilitation Plan; protection of remnant native vegetation; and a Groundwater Monitoring and Management Plan.

***Bulletin 1211: Coburn Mineral Sand Project***

The EPA released its report and recommendations on the proposal by Gunson Resources to develop the Coburn Mineral Sand Project in the Shark Bay district. The proposal included the excavation and processing of heavy mineral sand over 12 years, with the concentrate trucked 250 kilometres south to Geraldton for direct export. The EPA assessed the proposal at the level of Public Environmental Review.

The key environmental factors considered by the EPA in its report were: groundwater; flora and vegetation; fauna; rehabilitation; and World Heritage and conservation values. The EPA concluded that it was unlikely that implementation of this proposal would compromise the EPA's objectives, provided there was satisfactory implementation by the proponent of the recommended Ministerial Conditions and proponent commitments.

The original proposal presented a number of risks to the Shark Bay World Heritage Property. However, these risks were significantly reduced by the removal of Pit 10, the largest and northernmost pit, from the proposal. This in turn reduced the life of the mine and the footprint.

The EPA recommended that mounding of groundwater be managed through the implementation of a specific Groundwater Mounding Management Plan. The EPA recommended a Ministerial Conditions requiring Gunson

Resources to conduct searches for Declared Rare Flora and Priority Flora prior to the development of each pit. A similar approach has been taken for fauna, together with the inclusion of a requirement for baseline surveys and monitoring of Malleefowl (*Leipoa ocellata*) populations. In order to maximise the likelihood of successful rehabilitation, the EPA recommended a Ministerial Condition to develop a Progressive Rehabilitation Programme which comprises a Soil Management Plan, Revegetation Management Plan and Weed Management Plan.

***Bulletin 1212: Cataby Mineral Sands***

The EPA released its report and recommendations on the proposal by Iluka Resources to establish a mineral sands mine in the Cataby area. The proposal involved mining of thirteen pits to extract 30 million tonnes of ore over five years. The EPA assessed the proposal at the level of Environmental Protection Statement.

The key environmental factors identified in the EPA's report were: Carnaby's Black Cockatoos; vegetation; and noise. The EPA considered the proposal was environmentally acceptable, subject to implementation of the following Ministerial Conditions: a Carnaby's Cockatoo Management Plan; a Groundwater Dependant Ecosystem Management Plan; a Noise Management Plan; a Vegetation and Flora Management Plan; a Surface Water Management Plan; a Dieback Management Plan; a Rehabilitation Plan; and a Closure Plan.

***Bulletin 1217 Waroona Mineral Sands Project***

In April 2006, the EPA released its report and recommendations on the

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proposal by Iluka Resources to develop a mineral sands mine 1 kilometre north of the township of Waroona. The main components of the proposal include: three mine pits; solar drying dams; ore concentrator; associated mine infrastructure and upgrade to Peel Road and intersection of Peel Road and South West Highway. The project is expected to yield 245, 000 tonnes of heavy mineral concentrate over the 4 year life of the mine.

The EPA set the level of assessment at Public Environmental Review with a 4 week review period. This level of assessment was based on the proximity of the mine to Waroona residents; direct and indirect impacts on flora and fauna including clearing of regionally significant vegetation containing a Threatened Ecological Community, and displacement of the Quenda and Common Brushtail Possum; potential for groundwater drawdown impacts from dewatering on adjacent significant vegetation; and rehabilitation of degraded areas.

The EPA determined that the project could be managed subject to implementation of Ministerial Conditions relating to: completion of surveys and management of regionally significant vegetation; relocation of displaced Quenda and Possums; groundwater level monitoring and establishment of 'management criteria' near significant vegetation; and progressive rehabilitation of the mining area. The EPA also recommended conditions relating to audible warning signals; water resource management and potential acid sulfate soils. Iluka Resources also committed to carry out works relating to: rehabilitation, fencing and covenanting of nearby significant flora containing a Threatened Ecological Community to offset clearing;

rehabilitation of previously degraded riparian vegetation; retention of habitat trees; and reinstating landforms.

## **ENVIRONMENTAL ASSESSMENT OF PLANNING SCHEMES**

A key issue for the EPA in assessing planning schemes under s48A of the EP Act is to ensure a rational linkage between the level and detail of environmental assessment and the relevant 'stage' of planning approval being considered. The planning approval process is a hierarchical one, normally involving a series of stages through regional scheme, town planning scheme, structure plan, subdivision and to development approval. When assessing a scheme or amendment at the regional scheme stage, the EPA would normally focus on 'higher level' environmental issues such as protection of regionally significant environmental features.

The level of detail required for environmental assessment normally increases as the planning detail increases in town planning scheme and structure planning. At this stage, more detailed environmental information is required, for example, in terms of boundaries for protection of wetlands and other significant environmental features, cumulative impacts and drainage management.

The EPA is keen to ensure that this hierarchy of planning and environmental assessment is rational and that a consistent approach is adopted. Close collaboration with planning agencies is an essential element so as to ensure an efficient and effective process.

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## Alkimos-Eglinton Metropolitan Region Scheme Amendment No. 1029/33



*Alkimos: landforms and vegetation in the vicinity of the proposed wastewater treatment plant site(WWTP). (July 2005. Mark Brundrett, Terrestrial Ecosystems Section, EPA Service Unit)*

The EPA provided advice and recommendations to the Minister for the Environment in November 2005 in Bulletin 1207 on the Western Australian Planning Commission's proposal to amend reservations and zonings in the Metropolitan Region Scheme (MRS Amendment No. 1029/33) consistent with the Alkimos-Eglinton Structure Plan. The amendment was subsequently gazetted on the 7 July 2006.

Alkimos-Eglinton is 40 kilometres northwest of the Perth CBD comprising 2,660 hectares with a coastline 7.5 km in length and a width of 4.5 km inland from the coast. The area is bounded by Butler and Jindalee to the south and Yanchep to the north and will eventually accommodate around 20,000 dwellings and a population of 50,000 people.

The main purposes of MRS Amendment No. 1029/33 was to:

- relocate the waste water treatment plant (WWTP) inland;
- relocate the groundwater treatment plant inland;

- modify the alignment of the Parks and Recreation reserve boundary alignment;
- create new Parks and Recreation reserves.

The EPA concluded that Amendment No. 1029/33 to the MRS would, in part, be inconsistent with the conservation and protection of significant environmental and geoheritage values in the area. Therefore, the EPA recommended Ministerial Conditions modifying and increasing reserve areas to adequately protect the environmental and geoheritage values of the area, particularly an east - west ecological parabolic dune linkage. The EPA recommended an increase in Parks and Recreation reservation of 146 hectares to a total of 523 hectares, 25 per cent of the area.

The EPA considered that the site proposed for the relocation of the WWTP would have unacceptable impacts on the geoheritage and landscape values of the Alkimos dune system. The EPA recommended that this part of the Alkimos dune system be reserved in the MRS to protect its natural values.

The EPA also recommended that a 600m buffer measured from the boundary of the eventual WWTP site should be reserved for Public Purposes in the MRS, to prevent the siting of odour sensitive land uses within an area likely to be impacted by unacceptable odour levels from the WWTP. The EPA will assess odour emissions from the proposed Alkimos WWTP at Sites A and B in more detail during the assessment currently being undertaken by the EPA pursuant to the EP Act.

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## SECTION 45C APPROVALS

The section 45C amendment to the EP Act, was enacted in 2003. The amendment enables the Minister for the Environment, or his delegate, the Chairman of the EPA, to approve a minor change to a proposal after assessment.

The EPA has published Draft Guidelines, which have been amended several times to clarify the approvals process, for a proponent considering making a submission for a change to a proposal. These are on the EPA website (*Policies/Other Documents*).

For the 2005-2006 period, the EPA Chairman has approved 41 changes (Appendix 11). The changes are recorded in an attachment to the amended Statements, which are publicly available either from the Office of the Appeals Convenor or the Department of Environment and Conservation DEC library in the Atrium building.



*Ironstone Gully in the Yarragadee Project Study Area. (May 2006. Mark Brundrett, Terrestrial Ecosystems Section, EPA Service Unit)*

## POLICY DEVELOPMENT

The focus on policy development by the EPA for this reporting year has been one of consolidation and completion. The bouyant State economy has put pressure on environmental approvals processes and these have tended to subsume policy development capacity.

Public policies by their nature require extensive consultation and negotiation. The end point of EPA initiated Environmental Protection Policies and State Environmental Policies is a government decision and adoption on a whole of government basis.

An important component of EPA's policy formulation is wide public consultation and detailed negotiation with key stakeholders. The results are delivered through adoption, ownership, implementation and commitment.

### Environmental Protection Policies

Progress on Environmental Protection Policies is summarised in Tables below.

### State Environmental Policies

A State Environmental Policy (SEP) is a non-statutory Government policy position on a particular aspect of the environment. It is enabled under Part II section 17(3) of the EP Act whereby the EPA can "consider and make proposals as to the policy to be followed in the State with regard to environmental matters".

The process for developing a SEP is largely based on the statutory requirements for developing an EPP under Part III of the Act. A SEP is developed in its first stages by the EPA. Following a public consultation process,

a SEP can be approved by the Minister for the Environment and adopted by Cabinet on a whole-of-Government basis.

A SEP is a relatively new policy instrument. The concept of SEP's was developed in 2004 following amendments to the EP Act which provided wider reaching powers of environmental protection, such as Environmental Harm provisions and clearing controls. These Act amendments shifted policy emphasis away from statutory Environmental Protection Policies (EPPs) developed under Part III with the force of Law. There became a greater need for a more flexible policy instrument which would provide guidance on matters of environmental significance without the need for coercive powers.

A SEP could have the scope to provide the following:

- Establish environmental values and environmental quality objectives for a particular environment;
- Identify a framework for implementation using existing statutory mechanisms under the Act (such as Environmental Impact Assessment, Licensing, Regulations and/or EPPs) and by guiding other agency mechanisms (such as Town Planning Scheme provisions and Statement of Planning Policies). New funding initiatives can also be used to facilitate the implementation of SEP's; and
- Define environmental performance criteria against which to audit environmental performance.

## Policies Being Implemented

All EPP's and associated maps may be viewed on the EPA website at [www.epa.wa.gov.au](http://www.epa.wa.gov.au) or at the DEC's Library Resource Centre, Atrium Level 4 168 St Georges Terrace, Perth.

### *Environmental Protection (Swan Coastal Plain Lakes) Policy*

In 1999 a statutory review of the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* was undertaken. On the 22 October 2003, the 1999 revised draft Policy was remitted back to the EPA. The draft *Environmental Protection (Swan Coastal Plain Wetlands) Policy 2004*, together with an explanatory document and draft Wetlands Register, were released by the EPA for a 13 week public consultation period on 19 July 2004.



*South-western spiny tailed gecko* (*Stropurus spinigerus subspecies Spinnergerus*). (Mark Brundrett, Terrestrial Ecosystems Section, EPA Service Unit)

The Regulatory Impact Assessment Panel established by the former Minister for the Environment to determine the implications of the draft Swan Coastal Plain Wetlands Environmental



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Protection Policy reported in mid 2005. In December last year the former Minister released the Government's response to the Panel's recommendations.

The Policy and Regulations now incorporate key changes derived from the Government's response including establishing an independent appeals process and deleting Notice on Title requirements.

In determining the future of the Policy, the Minister for the Environment; has met with a range of interest groups to gain a greater understanding of the issues surrounding the Policy. It is anticipated that a decision regarding the Policy will be announced in the near future.

#### ***State Environmental (Cockburn Sound) Policy 2005***

Western Australia's first State Environmental Policy for the protection of the environmental quality of Cockburn Sound was released in January 2005, after extensive scientific and public consultation.

The new Policy takes a precautionary approach to environmental management. It sets early warning levels to trigger preventative action and prevent environmental impacts that might threaten the long-term ecological sustainability of the Sound and its social values. It is backed by the recently expanded powers under the EP Act, including environmental harm, clearing controls and unauthorised discharge regulations.

For example, for premises licensed under the EP Act, licence conditions will ensure that the environmental values are

protected and environmental quality objectives are being met.

For diffuse sources of emissions which find their way to the waters of Cockburn Sound, the Cockburn Sound Management Council plays a role in ensuring that land use practices within the catchment of Cockburn Sound are addressed.

As well, this Policy empowers the Cockburn Sound Management Council to report annually to the Minister for the Environment on the 'State of the Sound' and for the Minister to table that report in Parliament.

Three key implementation documents have been developed in consultation with key stakeholders to support the Policy, saying what has to be achieved and who has responsibility for its implementation and enforcement:

- An Environmental Management Plan for Cockburn Sound and its Catchment, prepared by the Cockburn Sound Management Council, outlines on-ground actions for implementing the Policy, and establishes the particular roles and responsibilities of managers and user groups. The Council will coordinate implementation of the Plan to protect the environmental values of Cockburn Sound. In particular it will facilitate multiple use of Cockburn Sound and its foreshore, integrate management of the land and marine environments, coordinate research and investigations and monitor and report on performance.

The Environmental Quality Criteria Reference Document for Cockburn Sound (2003-2004) outlines the environmental quality management

framework for the Sound and provides the Environmental Quality Criteria (EQC), or benchmarks, to enable the State Environmental Policy to be implemented. There are EQC set for each environmental quality objective to ensure that water quality in the Sound is adequate for seagrass health and re-colonisation and for a generally healthy and resilient ecosystem

- which allows ongoing multiple social uses within the Sound. Development of the criteria has mainly been based on the guidelines and approaches recommended in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ 2000).
- The Manual of Standard Operating Procedures for Environmental Monitoring against the Cockburn Sound Environmental Quality Criteria (2003-2004) sets out the standard procedures for environmental monitoring in Cockburn Sound including

information on monitoring design, preparation, data management and data analysis for interpretation against the EQC. The Manual ensures a consistent approach is taken in assessing environmental quality in Cockburn Sound and ensures data from different sources can be temporally and spatially integrated.

All four documents are available on the EPA's web site at <http://www.epa.wa.gov.au> or on the Council's web site at <http://csmc.environment.wa.gov.au>

### Position Statements

The EPA has continued its program of setting out high level policy in Position Statements.

Two more were finalised in this reporting year.

**Table 4: Environmental Protection Policies in force and their status as at June 2006**

Name	Approval date	Review date	Comment
Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992	11.12.92	11.12.99	EPA is awaiting the finalisation of the Water Quality Improvement Plan before recommending the review.
Environmental Protection (Swan Coastal Plain Lakes) Policy 1992	18.12.92	18.12.99	Changes to the Swan Coastal Plain Wetlands Policy and Regulations derived from the Government's response have been incorporated. It is anticipated the Minister for the Environment will announce a decision on the policy in the near future.
Environmental Protection (Gnangara Mound Crown	24.12.92	24.12.99	Review on hold awaiting section 46 assessment to



Name	Approval date	Review date	Comment
Land) Policy 1992			review Ministerial Conditions.
Environmental Protection (Swan and Canning Rivers) Policy 1998	10.07.98	10.07.05	Awaiting finalisation of the <i>Swan and Canning Rivers Management Act 2005</i> . The policy will be revoked on proclamation of this Act.
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	28.10.98	28.10.05	EPA is awaiting finalisation of the <i>Environmental Protection (Swan Coastal Plain Wetlands) Policy 2006</i> before commencement of the review of the <i>Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998</i> .
Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999	21.12.99	21.12.06	The EPA have recommended deferral of the review of the Policy to the Minister for the Environment awaiting finalisation of the Ambient Air NEPM State Environmental Policy and the State Industrial Buffer Statement of Planning Policy.
Environmental Protection (Ozone Protection) Policy 2000	17.10.00	17.10.07	Policy being implemented.
Environmental Protection (Western Swamp Tortoise Habitat) Policy 2002	18.02.03	18.02.10	In June 2006 the EPA published a final Guidance for the Assessment of Environmental Factors, Protection of the Western Swamp Tortoise Habitat. The guidance compliments the Environmental Protection Policy and will assist proponents, consultants and the general public in achieving environmentally acceptable proposals affecting the Western Swamp Tortoise Habitat.
Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003	18.03.03	18.03.10	Policy being implemented.

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**Table 5:**        *Environmental Protection Policies in development*

<b>Name</b>	<b>Status</b>
Draft Environmental Protection (State Groundwater) Policy	On hold.
Draft Environmental Protection (State Marine Waters) Policy	On hold.

**Table 6:**        *State Environmental Policies in force and their status as at June 2006*

<b>Name</b>	<b>Date</b>	<b>Status</b>
State Environmental (Cockburn Sound) Policy 2005	20.01.05	The inaugural <i>State of Cockburn Sound 2005</i> report was tabled in Parliament by the Minister for the Environment in November 2005. This report was prepared as part of the implementation of the <i>State Environmental (Cockburn Sound) Policy 2005</i> .

**Table 7:**        *State Environmental Policies in development*

<b>Name</b>	<b>Status</b>
Draft State Environmental (Coastal Zone) Policy	The EPA has agreed to pursue a joint approach between the EPA and the Western Australian Planning Commission (WAPC) on the development of the Coastal Zone State Environmental Policy.
Draft State Environmental (Ambient Air Quality NEPM) Policy	The EPA and the Minister for Environment have endorsed the drafting of a State Environmental Policy (SEP) for the implementation of the Ambient Air National Environment Protection Measure (NEPM). This involves deeming the NEPM as a statutory Environmental Protection Policy and the preparation of a SEP to detail the implementation of the Ambient Air NEPM.

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Position Statement No. 8 sets out the EPA's position on the role it sees it has in natural resource management (NRM). The Authority considers it has a role in establishing the high level environmental values and environmental objectives/targets and a role in the environmental evaluation of the sector. It is the natural resource manager's role to manage, not EPA's.

The EPA has linked its sector evaluation role to State of the Environment Reporting.

Given the importance of the natural resource management sector in WA and the significant part the NRM Regional Groups play in managing funding to achieve environmental (and other) objectives, it is timely that the Authority's position is made clear.

Position Statement No. 9 on Environmental Offsets was also finalised after two rounds of formal consultation and following feedback from some public forums convened by the Environmental Consultations Association (WA) and the National Environmental Law Association (WA Division).

This Position Statement has aroused the most interest of any: primarily because it breaks new ground in articulating a policy position on the difficult questions regarding the application of offsets in environmental decision making.

The Position Statement will provide the basis for a whole of government environmental offsets policy as well as being augmented by a specific Guidance Statement on the subject.

Appendix 6 provides a list of Position Statements.

## **Guidance Statements**

The EPA prepares Guidance Statements to provide concise advice on issues that are frequently addressed in its environmental impact assessments. This advice provides the EPA's view on how issues should be dealt with during assessment. The advice is based on experience with similar proposals over the years. Each statement is designed to increase certainty for proponents and provide transparency for the wider community.

The advice in Guidance Statements is not mandatory but proponents and the community should consider it to be the best guide to the EPA's current thinking on a particular issue. If proponents demonstrate that a proposal will meet or better the requirements in the relevant Guidance Statement, then they are likely to find that the assessment of their proposal will be simpler and faster. Proponents may take a different approach to dealing with an issue if they wish, but for the EPA to find that alternative acceptable, the proponent should provide a well-reasoned argument, supported by appropriate technical data. The EPA will then consider the issue on its merits on a case by case basis.

There are two steps in the Guidance Statement development process. Key stakeholders are generally consulted about issues in a new Statement via a workshop or similar process. A Draft Guidance Statement is then agreed by the EPA and released for public comment, usually for 12 weeks. The

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EPA takes all comments into account during the preparation of the Final Guidance Statement. Final Guidance Statements are subject to review every five years, or when significant new information becomes available.

Twenty-six Guidance Statements are now available in either draft or final form. Two draft Guidance Statements were published as final Statements and two Statements were amended during the year.

Final Guidance Statement No. 6 on the Rehabilitation of Terrestrial Ecosystems was issued during the year, as was Guidance Statement No. 7 on Protection of the Western Swamp Tortoise.

Guidance Statement No. 10 on the Level of Assessment of Proposals within System 6 and the Swan Coastal Plain portion of System 1 was updated based on experience to date and improved knowledge and re-published. Guidance Statement No. 47 on Odour has been withdrawn and is currently undergoing revision. Interim odour guidance is still available on the EPA website. Buffer distances for odour are specified in EPA Guidance Statement No. 3 on Separation Distances Between Industrial and Sensitive Land Uses, which is still current.

A full list of Guidance Statements and their stage of development is included in Appendix 7.

## **MONITORING OF LIQUID WASTE TREATMENT FACILITY, BROOKDALE**

Waste Management (WA) (WMWA), a corporate entity within the Department of Environment and Conservation is responsible for the operations of the Liquid Waste Treatment Facility at Brookdale.

The EPA has responsibility for monitoring compliance with the Ministerial Conditions contained in Ministerial Statement 588 issued as a Ministerial Direction under s110 of the EP Act.

The EPA contracts an independent auditor to assist the EPA monitor compliance with the Ministerial Conditions.

At the direction of the Minister for the Environment the facility ceased operations on 31 December 2003.

The EPA reviewed the Detailed Site Investigation Plan (DSI) as Phase 1 of the decommissioning and rehabilitation of the Brookdale Liquid Waste Treatment Facility.

The Decommissioning and Rehabilitation Plan is being prepared by Waste Management (WA) in three phases:

- a DSI which provides for sampling of soil and groundwater to determine the extent, if any, of contamination of the site;
- a site Management Plan is then required to undertake any

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rehabilitation of contaminated areas that may result from the outcomes of the sampling undertaken through the implementation of the DSI; and

- if required, an ongoing Water Monitoring Plan may be required depending on the outcomes of the first two plans.

The Minister for the Environment approved the DSI as the first phase towards decommissioning and rehabilitation of the Brookdale Liquid Waste Treatment Facility site.

Waste Management (WA) has advised that the sampling of soil and groundwater to determine the extent, if any, of contamination of the site will be completed in June/July 2006. It will then prepare and refer its report on the outcomes of the sampling undertaken in accordance with the approved DSI to the EPA for its consideration.

## **Regulation 17 Applications**

Applications for approval to vary from the assigned noise levels under regulation 17 of the *Environmental Protection (Noise) Regulations 1997* are determined by the Minister for the Environment on the EPA's advice. Progress milestones were achieved in the following applications:

### ***Sons of Gwalia Ltd, Greenbushes tantalum mine***

Following completion of the EPA assessment, an initial draft of an approval notice was received from Parliamentary Counsels Office, and the notice is currently being finalised.

### ***Western Power Corporation, transmission substations***

A noise regulation 17 approval was granted by the Minister for the Environment and *Gazetted* on 13 June 2006. The approval is based on a significant noise mitigation program, through which Western Power would reduce noise emissions from its 34 non-compliant transmission substations to achieve compliance or within 5dB of compliance over five years.

### ***Alcoa Wagerup refinery***

A strategy briefing on Alcoa's noise regulation 17 application was held in December 2005, in conjunction with the Part IV assessment of the Wagerup 3 expansion proposal. The EPA reported on the noise regulation 17 application as part of the Bulletin for the Wagerup 3 expansion (Bulletin 1215), recommending that a noise regulation 17 approval be granted, while noting that Alcoa is to provide further assessment of the likely costs of additional noise reduction works on the existing plant.

### ***Esperance Port Authority extension of 2001 approval***

An independent technical review of noise emissions from the Esperance Port has been finalised and the EPA expects a strategy briefing to take place in the near future, in relation to the proposed extension of the Port Authority's noise regulation 17 approval granted in 2001.

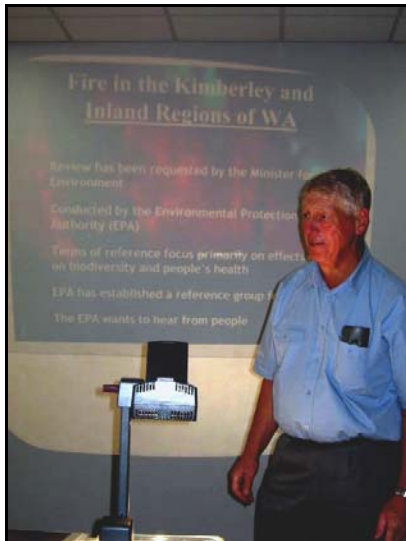
### ***Verve Energy Corporation, Geraldton power station***

Following a technical assessment leading to an EPA strategy briefing, a Bulletin is in preparation providing the

EPA's advice on the noise regulation 17 application.

Other noise regulation 17 applications awaiting information from the applicants relating to the technical assessment: Albany Port (truck transport); CBH Esperance (grain handling); Hamersley Iron (Pilbara Iron Ore port operations, Dampier); Millennium Inorganic Chemicals, Australind; Simsmetal (scrap metal recycling, Spearwood); Tiwest operations, Chandala; and Laminex (particleboard plant, Dardanup).

## CONSULTATION



*Public meeting for the EPA Review of Fire Management in the Kimberley and Other Rangeland Regions of Western Australia. Committee Chairperson, Dr Roy Green. November 2005.*

The EPA undertakes an array of consultative processes relating to proposals being assessed. These include:

- public review of proponent documentation for proposals either being formally assessed or for which a Strategic

Environmental Review is being undertaken;

- participation at public meetings held by proponents to give advice on the EIA process and to respond to questions;
- conduct EPA-initiated public meetings where there is a degree of public sensitivity, usually after the close of the formal public review period, to provide feedback on the key environmental issues raised and to receive any other environmental issues the community requests the EPA to consider in its assessment of the proposal. These meetings also provide an opportunity for the EPA to inform the community of the likely timing of the EPA's advice to the Minister for the Environment on a proposal and appeal rights available;
- participation at stakeholder meetings; and
- receiving briefings from stakeholder groups at meetings of the EPA Board on issues of importance.

## SITE VISITS CARRIED OUT BY THE EPA

During the year, various EPA members (subject to availability) travelled within the State to examine proposals in the field and to meet with proponents on-site.

Proponents have welcomed the opportunity to meet with the EPA to discuss issues in the less formal setting of the project. Relevant staff from the EPA Service Unit accompanied the EPA. Whenever possible, EPA members

took the opportunity to meet with key local stakeholders, including local government, interest and conservation groups.



*EPA site visit for Guidance Statement 6: Rehabilitation of Terrestrial Ecosystems. Orange Grove Quarry, November 2005.*

Site visits have proved very valuable in a number of ways, including:

- giving EPA members a clearer understanding of the environmental setting of a proposal;
- providing an opportunity to meet proponents, exchange views, address environmental issues associated with their proposal, and network in an informal atmosphere;
- providing an opportunity for the mutual exchange of views and making it easier to communicate with proponents and others through subsequent telephone interaction and formal EPA board meetings;
- leading to better environmental advice being provided to the

Minister for the eNvironment;  
and

- enhancing the identity of the EPA as an Authority that provides independent advice; and
- providing an identity to an otherwise 'invisible' Board.

A list of the EPA and other site visits is provided in Appendix 8.

## **ENVIRONMENTAL PROTECTION AUTHORITY REFERENCE PANELS**

The Environmental Protection Authority (EPA) has established a number of expert reference panels which meet on an 'as needs' basis and provide advice to the EPA of matters of policy referred to them by the Authority. The four expert reference panels established are:

- Industry;
- Mining;
- Natural Resource Management; and
- Land Use Planning.

The panels include expert and community representation.

During 2005/06 the panels considered and provided advice to the EPA on:

- Environmental Offsets Position Statement; and
- Ambient air standards policy direction.

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## APPENDICES

### APPENDIX 1: The Role and Function of the Environmental Protection Authority

#### What is the Environmental Protection Authority?

The Environmental Protection Authority (EPA) is a statutory authority and is the primary provider of independent environmental advice to Government. The EPA is not a regulatory body. The regulatory responsibilities within the *Environmental Protection Act (1986)* (EP Act) are undertaken by the Department of Environment and Conservation (DEC). The EPA consists of five members, including a full-time chairman.

#### When was the EPA established?

The EPA came into existence on 1 January 1972 and operates under the EP Act.

#### What is the ‘environment’ to the EPA?

The EP Act defines environment to mean *living things, their physical, biological and social surroundings, and interactions between all of these. ... For the purposes of the definition of “environment” ... the social surroundings of man are his aesthetic, cultural, economic and social surroundings to the extent that those surroundings directly affect or are affected by his physical or biological surroundings.*

#### What are the EPA’s objectives?

The EPA’s objectives are to protect the environment and to prevent, control and abate pollution.

#### How does the EPA achieve its objectives?

The EPA achieves these objectives through:

- Providing advice to the community, stakeholders, developers, regulators and those within Government who formulate environmental policy;
- Preparing Environmental Protection Policies (EPPs) which have the force of law and State Environmental Policies (SEP), Position Statements and Guidance Statements which are non – statutory. Details of the Policy program are provided on the EPA website ([www.epa.wa.gov.au](http://www.epa.wa.gov.au));
- Assessing development proposals (including schemes and scheme amendments) and activities that have the potential to impact on the environment, and advising the Minister for the Environment regarding their environmental acceptability and conditions which should apply if they are approved to proceed. Details are on the EPA website; and
- Auditing compliance with Ministerial Conditions for



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proposals for which the Department of Environment and Conservation is the proponent.

Who does the EPA involve when formulating advice to the Minister?

The EPA receives information from many sources, including the public, developers, peak bodies, interest groups and government departments, particularly the Department of Environment and Conservation.

In addition, the EPA has established four Reference Panels for mining, industrial, natural resource management and land use planning. Each reference panel has technical experts and community representation. The EPA may refer matters relevant to a particular Reference Panel for advice.

How does the EPA give advice to Government?

The EPA makes recommendations to the Minister for the Environment. The advice is public, and is generally through published Bulletins. The Government, through the Minister, makes the final decisions.

How can the EPA's advice be implemented?

The three main instruments for implementing the EPA's advice to Government are:

- Government endorsed statutory EPPs or non – statutory SEPs, which have been developed by the EPA in consultation with all interested parties;

- Ministerial Conditions set by the Minister for the Environment; on development proposals assessed by the EPA; and
- Bodies, including Government, government agencies, local government, stakeholders and the community, implementing the EPA's policies and advice, as provided or modified.

Public's Right to be involved

A basic tenet of the EP Act is the community's rights to know, to be informed, to be heard and to object to activities that have the potential to impact on the environment. Accordingly, the EPA provides opportunities for the public to be involved in the decision-making processes. Further information on how the public can become involved is available on the EPA website and in its advertisement in Public Notices section of the Monday edition of the *West Australian* newspaper.

Other functions of the EPA

The Minister can request the EPA to carry out other functions. For instance, the Minister has asked the EPA to carry out State of the Environment (SOE) reporting and Natural Resource Management (NRM) environmental performance auditing.

The EPA publishes Position Statements to provide the overarching principles and information which the EPA would use when giving advice to the Minister, the public, proponents, and decision-makers. The list of Position Statements is provided in Appendix 6.

In addition, the EPA publishes Guidance Statements that provide direction to proponents in developing their proposals for environmental impact assessment. The list of Guidance Statements is Provided in Appendix 7.

All Position and Guidance Statements are available on the EPA's website.

#### Principles that the EPA considers when carrying out its duties

The EPA has regard for a number of principles when giving environmental advice, including:

1. *The precautionary principle;*
2. *The principle of intergenerational equity;*
3. *The principle of the conservation of biological diversity and ecological integrity;*
4. *Principles relating to improved valuation, pricing and incentive mechanisms; and*
5. *The principle of waste minimisation.*

#### What are the environmental aspects that the EPA can consider when giving advice?

Generally, when providing advice, the EPA considers the following broad environmental factors:

- i) Integration;
  - Biodiversity; and
  - Sustainability.
- ii) Biophysical:
  - Flora and vegetation;
  - Fauna;
  - Wetlands (wetlands, rivers);
  - Water (surface or ground);

- Land form;
- Marine habitats; and
- Conservation Areas.

#### iii) Pollution Management:

- Air Quality;
- Water Quality (surface, marine or ground);
- Soil Quality;
- Noise;
- Radiation;
- Light; and
- Greenhouse Gases.

#### iv) Social Surrounds:

- Heritage;
- Visual Amenity; and
- Recreation.

#### v) Other:

- Decommissioning and rehabilitation.

#### Role of the proponent

A common concern raised with the EPA each year is that the Environmental Impact Assessment (EIA) process is biased because the proponent has the responsibility to prepare, or have prepared, the environmental review document. The basis of this concern is that the proponent, who has the greatest stake in having the project proceed, should not be given the opportunity to control the development of the major document on which the environmental impacts of the project are likely to be judged.

However, there are good reasons why the proponent should play a pivotal role in the preparation of the environmental review document, provided the appropriate checks and balances are in place. The preparation of this document is the prime way for proponents to

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ensure that environmental factors are given consideration in project decision-making. It is only through this mechanism that the proponent will appreciate the environmental impacts of the proposed project, and thus the need for good project design and a management program to ameliorate those impacts.

The EPA encourages and expects the proponent to give a high priority to environmental responsibility, including the preparation of a list of environmental commitments as part of its management program. This can be achieved only if the proponent is fully involved in the consideration of the environmental impacts of the project through the preparation of the environmental review document which requires the proponent to consider environmental issues and factors in project formulation. It is also important for the proponent and their consultant to prepare the document as though looking at the project through the eyes of the EPA. It needs to be as accurate and as full as possible.

It should be remembered that the preparation of the environmental review document is only one element of the process of EIA. There are a number of steps in EIA in WA which are designed to ensure the objectivity and adequacy of the information which is available to the decision-making authority. These steps can be summarised as:

- the scoping document for the preparation of the environmental review document is approved by the EPA;
- the scoping document is publicly available and, at the ERMP level of assessment, the scoping document is available for public comment prior to finalisation;

- the environmental review document can be released only after the EPA is satisfied that the document is appropriate for release;
- the public has the opportunity to comment on the environmental review document after it has been approved for release;
- the proponent is required to respond to public comments on the environmental review document, the EPA checks the adequacy of the response which is also available to the public;
- the EPA provides the Minister for the Environment, who is the decision-making authority, with an assessment report on the project after receiving advice from technical experts within its Service Unit (see below), other agencies and institutions; and
- the public (and the proponent) have a further opportunity to provide advice or information to the Minister, in the form of an appeal, following the public release of the EPA report and recommendations.

#### EPA linkages with government agencies and authorities

The EPA seeks advice from agencies, including the Department of Environment (DoE, now part of DEC) Department for Planning and Infrastructure (DPI), WA Planning Commission (WAPC), the Department of Conservation and Land Management (CALM now part of DEC), the Conservation Commission of Western Australia, the Marine Parks and Reserves Authority (MPRA), Department of Health, Department of Industry and Resources (DoIR),

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Department of Indigenous Affairs, Department of Fisheries and from 1 July 2006 the Department of Water (DoW) and the Department of Environment and Conservation (DEC).

*Department of Environment*

As a result of the Machinery of Government Report review, the Department of Environmental Protection and the Water and Rivers Commission were amalgamated to form the Department of Environment (DoE).

Administratively situated within the Department was the EPA Service Unit, consisting of the Environmental Impact Assessment Division and the Policy and Coordination Division, under the direction of the EPA. A Service Agreement between the Authority, Department and the Minister was established for the provision of departmental services to the EPA.

The EPA Service Unit carried out a variety of functions for the EPA, primarily EIA and preparation of draft EPA Bulletins, research and co-ordination functions in relation to the environment, and the preparation of draft EPPs, Position Statements and Guidance Statements.

The Department continued to administer the regulation requirements of the EP Act (for example Licensing of Industry and undertaking pollution investigations) and act as a proponent (for example for water allocation plans) and as a provider of expert advice on matters pertaining to pollution control, management of contaminated land and water resource protection and management as inputs to the EIA process.

In relation to policies and requirements for best practice in control of pollution, the EPA will continue to have a key role where it subjects proposals to EIA and through relevant EPPs.

Where DoE was the proponent of proposals that are subject to Ministerial Conditions set by the Minister for the Environment, the EPA undertook the statutory compliance audit role.

During 2005/06 the Department of Water was created from the Department of Environment which was then (the DoE) amalgamated with the Department of Conservation and Land Management to form the Department of Environment and Conservation (DEC). These changes came into effect on 1 July 2006.

*Department for Planning and Infrastructure and WA Planning Commission*

All town planning schemes and amendments (both Local Authority and Region Schemes) are required to be referred to the EPA under Section 48A of EP Act. If the EPA formally assesses a scheme or amendment to a scheme, both the Planning and Infrastructure, and Environment Ministers have to agree on conditions before approval can be given.

DPI and WAPC also prepare strategic plans that the EPA can report on under Section 16(j) of the EP Act.

*Department of Conservation and Land Management (CALM)*

In the case of CALM, the EPA had two different working relationships. CALM, as manager of forests and the conservation estate on behalf of the Conservation Commission of Western Australia, was required to implement

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Forest Management Plans which are assessed by the EPA. CALM was also a key provider of expert advice on conservation and biodiversity issues generally, and particularly during the EIA process.

During 2005/06 the Department of Water was created from the Department of Environment which was then (the DoE) amalgamated with the Department of Conservation and Land Management to form the Department of Environment and Conservation (DEC). These changes came into effect on 1 July 2006.

*Conservation Commission of Western Australia*

The Commission has responsibility for control and management planning of State Forest and the conservation estate. This includes adopting management plans for the estate and then auditing CALM's implementation of the plans. Where the EPA assesses plans, such as the Forest Management Plans, the EPA may then audit the Commission's compliance with Ministerial Conditions set by the Minister for the Environment.

*Marine Parks and Reserves Authority (MPRA)*

The MPRA has responsibility for control and management planning of marine parks and reserves. The MPRA provides advice on marine issues for development proposals under consideration by the EPA.

The MPRA is supported by a Scientific Advisory Committee which the EPA also calls upon from time to time for professional and technical input.

*Department of Health*

The Department of Health has a significant role in providing advice to the EPA on possible health impacts of proposals. Industrial and other activities can pose a risk to human health if not managed in an environmentally acceptable manner.

When the EPA requests a Health Risk Assessment to identify cumulative effects of an activity on human health, for example the impact of air emissions from several industries within a region, the EPA seeks advice from the Department of Health on the assessment particularly in relation to the validation of the modelling methods proposed.

The Department of Health also provides specialist advice in the remediation and management of asbestos in contaminated sites and where on-site containment of contaminated material is proposed.

*Department of Industry and Resources (DOIR)*

Two new Memoranda of Understanding (MOUs) between the EPA and DOIR were signed on 17 December 2004. The MOUs deal with onshore mining and exploration proposals and with onshore petroleum proposals respectively. The MOUs provide clear criteria for DOIR to refer proposals to the EPA under Part IV of the *Environmental Protection Act 1986*.

The MoUs are not a delegation of the EPA's powers but provide an agreed, efficient and transparent administrative framework for referral of proposals to the EPA. MoUs of this type are consistent with the recommendations of the Review of the Project Development Approvals System ("the Keating

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Review") and provide an effective means to ensure coordination between Government agencies and efficiency of the approvals process.

The MOUs were developed in consultation with industry and the conservation movement and have the support of both.

The onshore petroleum MOU complements the MOU between the EPA and DOIR on referral of offshore petroleum proposals which was signed on 3 June 2004.

#### *Department of Indigenous Affairs*

When the EPA is undertaking an assessment of a proposal, Aboriginal heritage may be a relevant environmental factor. The EPA must consider the issue and must satisfy itself that it can, and will, be addressed, consistent with the scope and requirements of the EP Act. One way to assist the EPA to be satisfied is for the EPA to be provided with confirmation that environmental aspects of the issue will be fully addressed through other processes, such as under the *Aboriginal Heritage Act*.

The EPA will give consideration to Aboriginal heritage matters to the extent that they may be affected by the impacts of the proposal on the physical or biological surroundings. The EPA will need to determine if changes to the physical or biological environment will result in there being an impact on matters of heritage significance to Aboriginal people.

Under both of these circumstances, the EPA will consult with and seek specialist advice from the Department of

Indigenous Affairs to avoid or reduce duplication.

#### *Department of Fisheries*

Department of Fisheries provides key advice on significant proposals that may have an impact on the marine environment.

The Department of Fisheries is responsible for the management of the State's fish resources, commercial, pearling and aquaculture industries, recreational fishers and the waters and habitats that surround the State's coastline.

The Department of Fisheries develops and implements appropriate and sustainable resource management strategies for the State's fisheries and fish habitats, including collaborative arrangements with the EPA in terms of aspects of natural resource management.

#### *Department of Water*

During 2005/06 the Department of Water was created from the Department of Environment which was then ( the DoE) amalgamated with the Department of Conservation and Land Management to form the Department of Environment and Conservation (DEC). These changes came into effect on 1 July 2006.

#### *Department of Environment and Conservation*

During 2005/06 the Department of Water was created from the Department of Environment which was then ( the DoE) amalgamated with the Department of Conservation and Land Management to form the Department of Environment and Conservation (DEC). These changes came into effect on 1 July 2006.

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**APPENDIX 2: Formal Assessments (including Regulation 17 variations.  
Excluding Environmental Protection Statements,  
Assessment on Referral Information and Proposal  
Unlikely to be Environmentally Acceptable which are  
listed in Appendix 3 and 4.)**

<b>Bulletin No.</b>	<b>Title</b>	<b>Level of Assessment</b>	<b>Release date</b>
1185	Gwindinup Mineral Sands Mine, Cable Sands	CER	6/7/05
1186	Solid Sodium Cyanide Plant Upgrade, Kwinana, Australian Gold Reagents	PER	25/7/05
1193	Tonkin Park Stage II Bassendean, change to environmental conditions, Ridgeway Pty Ltd	S46	29/8//05
1194	Southern extension of sandpit, Lot 2 Calinup Road, Gelorup, Shire of Capel, APH Contractors	PER	29/8/05
1197	Metropolitan Region Scheme Amendment 1050/33 Stakehill Swamp, Baldivis, Western Australian Planning Commission	S48A	24/10/05
1198	Gas pipeline to Nifty copper operations, Great Sandy Desert, Birla(Nifty) Pty Ltd	S46	3/10/05
1197	Metropolitan Region Scheme Amendment 1050/33, Stakehill Swamp, Baldivis, WAPC	S48A	24/10/05
1200	Tropical Timber Plantation, Beagle Bay, Tropical Timber Plantations Pty Ltd	PER	24/10/05
1201	Ammonia & Urea Plants, Burrup Peninsula	S46	31/10/05
1201	Ammonia & Urea Plants, Burrup Peninsula	S46	31/10/05
1202	East Pilbara Iron Ore & Infrastructure Project, East-West Railway & Mine Sites, Pilbara (Stage B), Fortescue Metals Group Ltd	PER	31/10/05
1207	Alkimos-Eglinton Metropolitan Region Scheme Amendment No. 1029/33	S48A	21/11/05
1209	Worsley Alumina – Efficiency & Growth, Increase of existing operations to 4.4 Mtpa	ERMP	28/11/05
1211	Coburn Mineral Sand Project	PER	9/12/05
1214	Hamersley Iron Brockman Syncline 4 Iron Ore Project	PER	05/01/06
1215	Alcoa Wagerup Alumina Refinery – Increase in production to 4.7 Mtpa; and Wagerup Cogeneration Plant	ERMP	05/01/06
1216	FMG Pilbara Iron Ore and Infrastructure Project: Cloud Break (no beneficiation)	PER	30/01/06
1217	Waroona Mineral Sands Project, Iluka Resources	PER	10/4/06
1219	Expansion of Jurien Gypsum Mining	PER	10/05/06



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Bulletin No.	Title	Level of Assessment	Release date
	Operation M170/1161		
1221	Gorgon Gas Development, Barrow Island Nature Reserve, Chevron Australia Pty Ltd	ERMP	6/6/06
1222	Floreat Lakes Residential Development, Northwest Sector, Herdsman Lake – Change to Environmental Conditions	S46	12/6/06

### **APPENDIX 3: Environmental Protection Statements and Assessment on Referral Information**

Bulletin No.	Title	Level	Release date
1184	Increase in Iron Ore Export through Esperance, Esperance Port Authority	ARI	4/7/05
1189	Gas fired Cogeneration Facility, Worsley	ARI	8/8/05
1190	Kwinana Gas Fired Power Station (water cooled condenser), NewGen Power Pty Ltd	EPS	8/8/05
1191	Revised proposal – Dampier Port increase in throughput to 120 Mtpa, Hamersley Iron	EPS	15/8/05
1191	Revised Proposal – Dampier Port increase in throughput to 120 Mtpa	EPS	15/8/05
1192	Revised proposal containment cell dimensions, industrial development, Tonkin Park, Bassendean, Stages 1 and 2, Ridgeway Pty Ltd.	ARI	29/8/05
1195	Yandicoogina Junction Southeast Mine, Hamersley Iron	EPS	5/9/05
1203	Koolan Island Iron Ore Mine & Port Facility, Aztec Resources	ARI	7/11/05
1204	Kemerton Lateral Gas Pipeline, Kemerton, DBNGP (WA) Nominees Pty Ltd	ARI	31/10/05
1205	Argyle Diamond Mine – Underground Project, 110 km south of Kununurra, East Kimberley	EPS	14/11/05
1206	Southern Looping Project, Loop 10, South of Kwinana	ARI	21/11/05
1208	Northern Looping Project, Loops 1-9, Karratha to Bullsbrook	ARI	30/11/05
1210	Orebody 25 extension, 8km north east of Newman	EPS	28/11/05
1212	Cataby Mineral Sands Project	EPS	5 & 9/12/05
1213	Phillips River Gold Project, Ravensthorpe	EPS	05/01/06
1218	Proposed Landfill Footprint Modification, South Cardup Landfill	ARI	24/4/06
1220	Jack Hills Iron Ore Project, Murchison Region, Murchison Metals	EPS	22/5/06
1223	Wagerup Cogeneration Project	ARI	12/6/06

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## **APPENDIX 4: Proposal Unlikely to be Environmentally Acceptable (PUEA)**

No PUEA Bulletins were released in 2005-06.

## **APPENDIX 5: s16 Strategic Advice**

<b>Bulletin No</b>	<b>Project Title</b>	<b>Release date</b>
1196	Wungong Catchment Environment and Water Management Project, Water Corporation	19/9/05
1199	Strategic advice on Managed Aquifer Recharge using treated wastewater on the Swan Coastal Plain	10/10/05

## **APPENDIX 6: Position Statements**

<b>No.</b>	<b>Position Statement</b>	<b>Current Status</b>
1.	Environmental Protection of Cape Range Province	Published December 1999
2.	Environmental Protection of Native Vegetation in Western Australia	Published December 2000
3.	Terrestrial Biological Surveys as an element of Biodiversity Protections	Published March 2000
4.	Environmental Protection of Wetlands	Published November 2004
5.	Environmental Protection and Sustainability of the Rangelands in Western Australia	Published August 2004
6.	Towards Sustainability	Published August 2004
7.	Principles of Environmental Protection	Published August 2004
8.	Environmental Protection in Natural Resource Management	Published October 2005
9.	Environmental Offsets	Published January 2006

## APPENDIX 7: Guidance Statements for the Assessment of Environmental Factors

### *Final Guidance*

No	Title	Release date
1	Protection of Tropical Arid Zone Mangroves along the Pilbara Coastline	April 2001
2	Risk Assessment and Management: Offsite Individual Risk from Hazardous Industrial Plant	July 2000
3	Separation Distances between Industrial and Sensitive Land Uses	June 2005
4	Deep and Shallow Well Injection for Disposal of Industrial Waste	September 1998
6	Rehabilitation of Terrestrial Ecosystems	June 2006
7	Protection of Western Swamp Tortoise Habitat, Uppers Swan/Bullsbrook	June 2006
10	Level of Assessment for proposals affecting natural areas within the System 6 Region and Swan Coastal Plain portion of the System 1 Region	June 2006
12	Minimising Greenhouse Gases	October 2002
13	Management of Air Emissions from Biomedical Waste Incinerators	March 2000
15	Emissions of Oxides of Nitrogen from Gas Turbines	May 2000
17	A Site Remediation Hierarchy for Contaminated Soil	July 2000
18	Prevention of Air Quality Impacts from Land Development Sites	March 2000
28	Protection of the Lake Clifton Catchment	May 1998
29	Benthic Primary Producer Habitat Protection for Western Australia's Marine Environment	June 2004
33	Guidelines for Environment and Planning	June 2005
34	Linkage between EPA Assessment and Management Strategies, Policies, Scientific Criteria, Guidelines, Standards and Measures Adopted by National Councils	April 1998
40	Management of Mosquitoes by Land Developers	June 2000
41	Assessment of Aboriginal Heritage	April 2004
49	Assessment of Development Proposals in Shark Bay World Heritage Property	November 2002
51	Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia	June 2004
54	Consideration of Subterranean Fauna in Groundwater and Caves during Environmental Impact Assessment in Western Australia	December 2003
55	Implementing Best Practice in Proposals Submitted to the Environmental Impact Assessment Process	December 2003
56	Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia	June 2004

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***Draft Guidance***

<b>No</b>	<b>Title</b>	<b>Release date</b>
33	Environmental Guidance for Planning and Development	June 2005
47	Interim Guidance on Odour as a Relevant Environmental Factor	2005
48	Groundwater Environmental Management Areas	February 1998

**APPENDIX 8: EPA site visits**

<b>Date</b>	<b>Site</b>
7 July 2005	Alcoa Wagerup Refinery – Unit 3 Expansion.
25 July 2005	Worsley Alumina and Growth Increase of Existing Operation to 4.4mtpa, Boddington.
27 July 2005	Worsley Alumina Refinery, near Collie.
5 September 2005	Coburn Mineral Sands Proposal, Shark Bay.
18 October 2005	MRS Amendment 1029/33 Alkimos Eglington including proposed Waste Water Treatment Plant site.
1 November 2005	Visit to sites within the metropolitan area where rehabilitation of native vegetation has been undertaken.
7-11 November 2005	Kimberley Fire Review – Regional community consultation meetings.
23 February 2006	Cape Peron Tourist Precinct.
14 March 2006	Jack Hills Phase 1 Iron Ore Project.
20-21 April 2006	Gorgon gas Project, Barrow Island
4 May 2006	Abroholos Islands – Long Island Tourist Development.
16 May 2006	Mt Gibson Iron Ore Project – Loading facility at Geraldton Port and mine site east of Dongara.
12-14 June 2006	South West Yaragadee Groundwater abstraction proposal – regional community consultation meetings and site visits.

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## **APPENDIX 9: Attendance at EPA Meetings**

<b>Attendance EPA Meetings – I July 2005 to 30 June 2006</b>		
<b>Name</b>	<b>No of Meetings Held</b>	<b>No of Meetings Attended</b>
Dr W Cox <sup>1</sup>	26	26
Mr D Glennon <sup>2</sup>	26	20
Ms J Payne <sup>3</sup>	26	26
Ms A Hinwood	26	26
Professor S Halls	26	18

### Foot Notes:

1. Dr W Cox was reappointed Chairman from 31 March 2006 to 30 June 2006.
2. Mr D Glennon was reappointed as Member from 31 March 2006 to 30 March 2007.
3. Ms J Payne was reappointed as Member from 31 March 2006 to 30 March 2008.

## **APPENDIX 10: Section 41a reports (minor change to a proposals) completed in 2005**

<b>Bulletin No.</b>	<b>Subject</b>	<b>EPA Report Date</b>
1187	Environmental management of groundwater abstraction from the Gngara Mound July 2003 – June 2004 – annual compliance report	22/8/05
1188	Environmental management of groundwater abstraction from the Jandakot Mound July 2003 – June 2004 – annual compliance report	22/8/05

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## APPENDIX 11: Section 45C List of approved changes to proposals

Statement No	Proposal Title	Variation	Approval date
474	Exmouth Marina village, Superlot B	ODP for Superlot B - changes to canal design	8/7/05
147	Leslie Salt, Expansion of Ponds, Port Hedland	Increase in salt production from 3.2 to 4.5 Mtpa	13/7/05
572	Ocean outlet for treated wastewater, Bunbury Wastewater Treatment Plant	Increase in nitrogen discharge to marine environment of up to 66 tonnes per annum for the period of works to upgrade the plant.	19/7/05
670	Cliff Head Development Project	Modification to shore crossing horizontal directional drill method	22/7/05
105, 359	Port Kennedy Regional Recreation Centre – Becher Point, Stage 1 & 2	Revised development plan, tabulated in submission	22/7/05
597	Perth-Bunbury Highway, Peel Deviation	Inclusion of 1.5 km of Peel Deviation Road at northern end to connect to the Metro Region Scheme road	28/7/05
621	Tutunup Titanium Minerals Mine	New mine area at Tutunup South	28/7/05
638	Dampier Port Upgrade, Dampier	Parker Point Sea Wall relocation 60m seaward	12/8/05
291	Duplication of synthetic rutile plant capacity, Capel	Construction of additional shed for product storage	18/8/05
573	Simpson Oilfield Development	Replacement of production pipeline, Varanus Island	25/8/05
131	Brockman 2 Detritals Mine	New mining area - pit 4 – below water table, new waste dump	1/9/05
131	Brockman 2 Detritals Mine	New mining area - pit 7 – above water table, waste dump	6/9/05
663	Roe Highway Stage 7	Build a bridge and roundabout connection, being the Karel Avenue connection (with Berrigan Drive)	23/9/05
584	Hope Downs Iron Ore Mine	Increase in mining rate from 25 to 30 Mtpa	3/10/05
291	Duplication of synthetic rutile capacity, Capel	Embankment lift of tailings dams	3/10/05
645	Kemerton Power Station	Increase in liquid fuel use from 100 hours to 300 hours of operation from 1/7/05 to 30/6/06	10/10/05

<b>Statement No</b>	<b>Proposal Title</b>	<b>Variation</b>	<b>Approval date</b>
614	Ammonia-Urea Plant, Burrup Peninsula	Split proposal into two, to operate under two Statements: <ul style="list-style-type: none"> <li>• Ammonia Plant</li> <li>• Urea Plant</li> </ul>	12/10/05
69	Kwinana Freeway Extension	Paganoni reserve	12/10/05
69	Kwinana Freeway Extension	Baldivis explosives depot	12/10/05
69	Kwinana Freeway Extension	Karnup Road interchange	12/10/05
417 & 523	Yandicoogina Iron Ore Mine, 90km NW of Newman	additional rail siding	21/10/05
506	Murrin Murrin Nickel Cobalt Project Stage 2 expansion, east of Leonora	Addition of a Heap Leach Facility to current hydrometallurgy-processing system.	13/12/05
690	Pilbara Iron Ore Infrastructure Project: Port and North-South Railway (Stage A)	Additional Reclamation Area – southern boundary of port footprint (clearing up to 78.4ha)	20/2/06
702	Dampier Port Upgrade to a throughput capacity of 120 million tpa	Increase in footprint (extended quarry) for future bulk stockpile	22/02/06
391	Port Geographe – Stage 1	Clearing of Seagrass Wrack	03/03/06
591	Boddington and Hedges Gold Mines, Shire of Boddington,	Expansion of approved project	21/3/06
685	Bluewaters Power Station, Shire of Collie	Change of Power Plant location to reduce land clearing impacts.	28/3/06
690	Pilbara Iron Ore Infrastructure Project: Port and North-South Railway (Stage A)	Amendments to Port Layout: Relocation of Railway Shift of Conveyor & Load-out facilities	6/4/06
591	Boddington & Hedges Gold Mines, Shire of Boddington	Accommodation village change of location and layout	7/4/06
514	West Angelas Iron Ore Project, Shires of East Pilbara, Ashburton and Roebourne	Increase in throughput to approx 30 Mt/yr of produced iron ore.	12/4/06

<b>Statement No</b>	<b>Proposal Title</b>	<b>Variation</b>	<b>Approval date</b>
645	Kemerton Power Station	Increase in liquid fuel use from 100 hours to 300 hours of operation from 1/7/06 to 30/6/07	20/4/06
421	Albany Foreshore Redevelopment, Princess Royal Harbour	Change to footprint of reclamation, land use and split off Proposal into two parts with nomination of separate Proponents (Landcorp for the eastern part, and City of Albany for the western part)	28/4/06
417, 523	Yandicoogina Iron Ore Mine & Railway 90 Kilometres north-west of Newman Hamersley Range	Joint upgrade of road proposal 90km northwest of Newman servicing both mines – Hamesley Iron Ore	12/05/06
27	Silicon Smelter Project, Kemerton & Moora	Addition of 3rd furnace and associated infrastructure	17/05/06
188	Fimiston Project Stage II - Mine and Waste Dumps	Realignment of Noise Bund and Loopline railway access	17/5/06
621	Tutunup Titanium Minerals Mine Shire of Busselton	O'Neil Extension of mine at Tutunup South Mine	17/5/06
679	Marillana Creek (Yandi) Life-of-Mine proposal mining leases 270SA 47/292, 90 km North-West of Newman Shire of East Pilbara	Joint upgrade of road proposal 90km northwest of Newman servicing both mines – BHP Iron Ore	19/5/06
692	East Clontarf residential development, Waterford, City of South Perth	Change in footprint	26/5/06
131	Brockman No 2 Detrital Iron-Ore Mine	Additional infrastructure, stockpiles and throughput	6/6/06
682	Goldsworthy Iron Ore Mines extension project 100-170 kilometres east of Port Hedland	Extension of mining pit footprint	8/6/06
710	Dampier to Bunbury Natural Gas Pipeline Northern Looping Project, Loops 1 to 9, Karratha to Bullsbrook.	Changes to the temporary areas of disturbance and vegetation clearance	29/6/06



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## APPENDIX 12: Financial Report

The administration costs of the EPA are as follows:

	2005-06 (\$'000)	2004-05 (\$'000)	2003-04 (\$'000)	2002-03 (\$'000)	2001-02 (\$'000)
<b><i>Recurrent</i></b>					
Salaries and allowances	591	577	579	452	390
<b><i>Other Expenses</i></b>					
Advertising expenses	41	66	0	0	0
Staff related expenses	13	19	16	41	41
Communications	6	9	10	10	4
Services and contracts	27	17	24	254	179
Consumable supplies	3	6	14	13	9
Repairs, Maintenance and Depreciation	0	1	2	2	7
<b><i>Total</i></b>	<b>681</b>	<b>695</b>	<b>645</b>	<b>772</b>	<b>630</b>

### ***Electoral Act 1907 (s175 ZE Disclosure)***

In accordance with Section 175 ZE of the *Electoral Act 1907*, the Environmental Protection Authority incurred the following expenditure in advertising, market research, polling, direct mail and media advertising:

1. Total expenditure for 2005/2006 was \$41 154 (2004/05 – \$66 250).
2. Expenditure of specified amounts of \$1 600 or greater in the following areas:

Advertising Agencies	Nil
Market research organisations	Nil
Polling organisations	Nil
Direct mail organisations	Nil
Media advertising organisations	Nil

#### ***Note:***

Section 175 ZE of the *Electoral Act 1907* requires “specified amounts” of \$1 600 or greater expended on advertising in the above categories to be notified in the annual report.

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## APPENDIX 12: Abbreviations

<b>ACTEPA</b>	Advisory Council to the Environmental Protection Authority
<b>AHC</b>	Australian Heritage Council
<b>ARI</b>	Assessment on Referral Information
<b>CALM</b>	Department of Conservation and Land Management
<b>CAMBA</b>	China Australia Migratory Bird Agreement
<b>CCWA</b>	Conservation Commission of Western Australia
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>DEC</b>	Department of Environment and Conservation
<b>DEP</b>	Department of Environmental Protection
<b>DoA</b>	Department of Agriculture
<b>DoE</b>	Department of Environment (amalgamation of WRC and DEP)
<b>DoF</b>	Department of Fisheries
<b>DoH</b>	Department of Health
<b>DoW</b>	Department of Water
<b>DIA</b>	Department of Indigenous Affairs
<b>DoIR</b>	Department of Industry and Resources
<b>DPI</b>	Department for Planning and Infrastructure
<b>CITES</b>	Convention on International Trade of Endangered Species
<b>EIA</b>	Environmental Impact Assessment
<b>EIS</b>	Environmental Impact Statement
<b>EMIAA</b>	Environmental Management Industry Association of Australia
<b>EMP</b>	Environmental Management Plan
<b>EPA</b>	Environmental Protection Authority
<b>EP Act</b>	<i>Environmental Protection Act (1986)</i>
<b>EPASU</b>	EPA Service Unit
<b>EPP</b>	Environmental Protection Policy
<b>EPS</b>	Environmental Protection Statement
<b>EQC</b>	Environmental Quality Criteria
<b>EQO</b>	Environmental Quality Objectives
<b>ERMP</b>	Environmental Review and Management Programme
<b>EV</b>	Environmental Values
<b>FMP</b>	Forest Management Plan
<b>GBRS</b>	Greater Bunbury Region Scheme
<b>HRA</b>	Health Risk Assessment
<b>JAMBA</b>	Japan Australia Migratory Bird Agreement
<b>LoA</b>	Level of Assessment
<b>MoU</b>	Memorandum of Understanding
<b>MPRA</b>	Marine Parks and Reserves Authority
<b>MRWA</b>	Main Roads Western Australia
<b>NAP</b>	National Action Plan
<b>NEPC</b>	National Environmental Protection Council
<b>NHT</b>	Natural Heritage Trust
<b>NWQMS</b>	National Water Quality Management Strategy
<b>NRM</b>	Natural Resource Management

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<b>PER</b>	Public Environmental Review
<b>PUEA</b>	Proposal Unlikely to be Environmentally Acceptable
<b>RO</b>	Reverse Osmosis
<b>SCP</b>	Swan Coastal Plain
<b>SEP</b>	State Environmental Policy
<b>SoE</b>	State of the Environment
<b>SOER</b>	State of Environment Reporting
<b>SRG</b>	Stakeholder Reference Group
<b>SRT</b>	Swan River Trust
<b>UNEP</b>	United Nations Environment Program
<b>UNESCO</b>	United Nations Education Scientific and Cultural Organisation
<b>VOC</b>	Volatile Organic Compound
<b>WA</b>	Western Australia
<b>WALA</b>	Western Australian Land Authority
<b>WALGA</b>	Western Australian Local Government Association
<b>WAPC</b>	Western Australian Planning Commission
<b>WMWA</b>	Waste Management WA
<b>WRC</b>	Water and Rivers Commission