



# Implementation Plan

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To accompany the

**Environmental Protection  
(Goldfields Residential  
Areas) (Sulfur Dioxide)  
Policy and Regulations  
2003**



**Environmental Protection Authority**

September 2010

## **Environmental Protection Policies**

An Environmental Protection Policy (EPP) is prepared under Part III of the *Environmental Protection Act 1986* and has “the force of law as though it had been enacted as part of this Act”, on and from the day on which the policy is published in the *Western Australian Government Gazette*. The *Environmental Protection Act* is binding on the Crown. Accordingly, all government departments and agencies are required under law to comply with both the *Act* and EPPs prepared under the *Act*.

An EPP establishes:

- the boundaries of the area and the portion of the environment to which the policy applies; and
- the basis on which the environment in this area is to be protected, or pollution is to be prevented, controlled or abated.

In addition, an EPP may:

- identify and declare the beneficial uses of the environment to be protected under the policy;
- specify the environmental quality objectives to be achieved and maintained under the policy;
- set out the indicators, parameters or criteria to be used for measuring environmental quality in the policy area;
- make statements relating to any activity directed towards the protection of the environment, including the discharge of waste;
- create offences and penalty provisions; and
- establish a program for the achievement and maintenance of the environment quality objectives within the policy area and may specify, among other things, measures designed to:
  - i. minimise the possibility of pollution;
  - ii. protect the environment; and
  - iii. achieve and maintain the beneficial uses to be protected.

Note:

This document has no legal status. It is published to assist in understanding the requirements of the Policy and Regulations and the way in which it is intended to administer them.

In the event of any inconsistency in meaning or interpretation the Policy and Regulations clearly prevail.

Cover page photos: Top & Middle –Emission from industry July 2009, (Peter Vasel); Bottom – Emission from industry March 2009 (Fiona Westcott).

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# 1. Introduction

The Environmental Protection Authority (EPA) has developed this Implementation Plan to accompany the *Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003* and *Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Regulations 2003*, hereinafter referred to as the Policy and Regulations. This Implementation Plan provides an important step towards outlining the roles and responsibilities for implementing the Policy.

Mechanisms to monitor and regularly review the Policy are included in this Implementation Plan. Performance measures are built into the review processes to document the success of the government and industry in implementing the Policy.

The Policy sets sulfur dioxide concentrations in residential areas of the Goldfields region that industries must monitor and must not exceed. Clause 6 sets sulfur dioxide concentrations that are never to be exceeded. These concentrations are a tightening of the 1992 Goldfields Policy by an immediate reduction to 0.35ppm. The sulfur dioxide concentration is progressively reduced from 0.35ppm in 2003 to 0.25ppm from 2008 onwards. This sulfur dioxide concentration represents the minimum level of air quality considered acceptable and should never be exceeded. If this concentration is exceeded then prosecution may proceed. Clause 7 sets a sulfur dioxide concentration of 0.20ppm that is desirable not to exceed. This concentration is based on the National Environment Protection Measures (NEPM) for ambient air quality standard. This clause sets a progressive reduction each year of the number of days 0.20ppm may be exceeded from three in 2003 to one from 2008 onwards. If 0.20ppm is exceeded on more than one occasion, then the EPA must report this to the Minister for the Environment. The sulfur dioxide concentrations are averaged over one clock hour.

The Environmental Protection Authority released a Discussion Paper in December 2009 to investigate potential issues which related to the Policy. As a result of this scoping exercise, it was recommended to the Minister that a review not be undertaken at this time and the Policy should remain in force until otherwise directed. A notice to this effect was published in Western Australian *Government Gazette* in June 2010. The current Policy will remain in force until revoked.

## 2. How will the Department of Environment and Conservation and the EPA manage Sulfur Dioxide?

The Department of Environment and Conservation (the Department) implements the Policy through issuing licences that are consistent with the Policy to premises that discharge sulfur dioxide in the Goldfields region. As well, the Department will also draw upon existing provisions under the *Environmental Protection Act (1986)*, in particular, Part V - Control of Pollution and Part VIII – General (Regulations).

## **Control of Pollution**

Under Part V of the *Environmental Protection Act (1986)* certain industrial premises with significant potential for pollution of air, land or water are known as ‘prescribed premises’ and must hold a Works Approval to construct and a Licence or Registration to operate.

The Department may take enforcement action to control pollution from both licensed and unlicensed sources.

### **Prescribed Licence Condition**

As indicated above in relation to the Regulations, the prescribed licence condition, which has been and will continue to be applied to all industries, is:

*“The occupier must ensure that the operations on the premises are conducted in such a way as neither to cause, nor to contribute to causing, the maximum sulfur dioxide concentration permitted in the ambient air of a protected area under clause 6 of the policy to be exceeded at any place within the area.”*

Failure by a licensee to comply with this condition is an offence, which may result in prosecution. This offence carries a penalty of up to \$125,000 with a daily penalty of up to \$25,000. The Department has prosecuted licensees in the past and retains this option; nevertheless the Department wishes to concentrate on improvements to licensee emissions management procedures, which are designed to prevent high concentrations of sulfur dioxide in protected areas.

### **Monitoring and Reporting**

Licence conditions require licensees to monitor the concentration of sulfur dioxide at specified locations in protected areas and report the results of monitoring in a specified manner.

Data from this monitoring programme, which the Kalgoorlie industries undertake jointly, allows the Department to assess the improvement of air quality over time (which, in the case of Kalgoorlie, has been significant). The data also provides evidence for enforcement action should that be necessary.

If the ambient sulfur dioxide concentration of 0.20ppm is exceeded at any one place (monitoring station) on more than one occasion per calendar year (as stated in Clause 7 of the Policy) the EPA must report this to the Minister for the Environment.

### **Pollution Management Strategy**

The Department will continue to actively respond to all “sulfur dioxide events” (defined in the Glossary) when they occur in protected areas rather than simply wait for an exceedence of the maximum sulfur dioxide concentration permitted in the ambient air of a protected area. This procedure has been used in the past, but is outlined below so that industries are aware of the Department’s actions.

Specifically, any “sulfur dioxide event” will be subject to assessment by the Department and interaction with the contributing industry or industries. More formally, if any particular industrial premises cause more than one “sulfur dioxide event” in a calendar year, the Department will review the procedures employed by that industry to control the discharge of sulfur dioxide from that premises. The Department will also review their adherence to those procedures, and take action as appropriate. The appropriate action may vary from detailed communication, clarifying whether a proposal initiative can and will be taken to prevent similar events, through to regulatory action under the provisions of the *Environmental Protection Act* (for example, section 62A(1)). In recent years, industry has taken action to improve their performance which has been reflected in lower SO<sub>2</sub> concentrations within the EPP areas. This approach is preferable to direct regulatory action in the first instance.

## **Environmental Impact Assessment**

Part IV of the *Environmental Protection Act (1986)* enables the EPA to carry out environmental impact assessment of development proposals that it considers are likely to have a significant effect on the environment. A formal level of assessment means that the proponent will prepare a detailed report describing the proposal, its likely environmental impacts and the approaches taken to ensure these impacts can be managed.

Any proposals for residential development within the Goldfields region will be required to be consistent with the Policy; that is development to be contained within the four protected areas outlined in the Policy during the life of the Policy.

Proposals for industries that may emit sulfur dioxide would need to demonstrate that air emissions can be managed such that the cumulative emissions from the proposed industry, together with existing industries, never exceed the maximum sulfur dioxide concentration within the protected areas. Air dispersion modelling is an important tool in demonstrating acceptable impact, however a proponent also needs to consider how emissions will be managed in very complex meteorological conditions, which are beyond the capability of computer models. The capacity of the airshed for future industry would be considered during this process. If required, the EPA could recommend environmental conditions to be set by the Minister for the Environment to manage air emissions. The EPA would also expect proponents to adopt best practice measures for the prevention or minimisation of adverse environmental impacts and the encouragement of practices beneficial to the environment, as outlined in the EPA’s Guidance Statement No 55 on ‘Implementing Best Practice in proposals submitted to the Environmental Impact Assessment Process’, December 2003.

## **General (Regulations)**

Part VIII of the *Environmental Protection Act (1986)* allows regulations to be made for the specific purpose of implementing the Policy. Regulations have been approved for the Goldfields region and are described in the Explanatory Document.

## **3. How will industry manage Sulfur Dioxide?**

### **Meeting the Policy**

The maximum sulfur dioxide concentration permitted (0.25ppm) will be a significant factor in minimising the probability of the sulfur dioxide concentration of 0.20ppm being exceeded. Industry and the Department believe that the level of air quality protection will continue to improve and that protected areas will be in full compliance with the NEPM objective.

The staged improvement approach used in the Policy has allowed each industry to refine their sulfur dioxide control strategies and develop/test alternative processing and/or scrubbing/removal options.

### **Responding to Sulfur Dioxide Events**

Industry has instigated measures aimed at controlling emissions in order to prevent sulfur dioxide events for the known range of conditions experienced in the Goldfields Region. However, despite the best efforts of each company, periodically meteorological conditions and/or technical problems can result in concentrations above 0.20ppm. The Department has generally been, and will continue to be, advised of each company's investigations and corrective actions following an event.

On an ongoing basis, individual companies review all of the monitoring data and further evaluate situations where the maximum permitted air quality concentrations are approached or exceeded. The findings of these evaluations are then used to determine if any changes to the control strategy are required. If changes are required, then the sulfur dioxide control procedure and/or strategy is updated. The ongoing application of this approach is expected to increase the range of conditions that are managed through the strategies and reduces the probability of future air pollution events occurring. The industries will continue to actively evaluate the monitoring data and refine the control strategies to improve their effectiveness.

### **Individual Company Performance**

Each company is committed to sustaining its operations and recognises that properly managing its sulfur dioxide emissions and its resulting air quality impacts is an essential part of achieving this. Part V of the *Environmental Protection Act* provides suitable mechanisms to manage each company's performance.

Each company:

- understands the need not to unreasonably impact upon the air quality in protected areas;
- has its own sulfur dioxide control strategy that is reviewed and modified on an ongoing basis; and
- attends regular meetings with the other sulfur dioxide emitting companies to share experiences and discuss the circumstances of any events.

## 4. Roles and Responsibilities

Table 1 outlines the roles and responsibilities of groups in implementing the Policy and Regulations.

**Table 1.**  
**Roles and responsibilities of groups implementing the Policy and Regulations**

<b>OFFICE OF THE EPA</b>
<b>Strategic Policy and Planning Services Division</b> Environmental Analysis and Review
<ul style="list-style-type: none"> <li>• Responds to general Policy enquiries and ensures the EPA website is kept up to date with access to a copy of the Policy and Regulations.</li> <li>• Keeper of the printed authorised legal maps, KALGJUN02, COOLJUN02, KAMBJUN02 and KURRJUN02.</li> <li>• Receives summary of 0.20ppm exceedences from Air Quality Management Branch</li> <li>• Conducts evaluation of the Policy's implementation and reports this to the EPA at appropriate intervals.</li> <li>• Commences review of the 2003 policy and regulations on behalf of the EPA as directed by the Minister.</li> <li>• Provides copies of the maps on request.</li> <li>• Keeper of and provides on request the metadata for the protected area boundaries.</li> <li>• Keeper of the secured CD of the authorised legal maps.</li> </ul>
<b>Assessment and Compliance Division</b> All Branches
<ul style="list-style-type: none"> <li>• The Planning and Infrastructure Assessments Branch assesses town planning schemes and amendments to town planning schemes as well as provides advice on structure plans, outline development plans and regional plans or strategies, and subdivision proposals all of which may require them to consider the Policy.</li> <li>• The Mining and Industrial Assessments Branch assess development proposals for sulfur dioxide emitting industry in the Goldfields region.</li> <li>• The Proposal Implementation Monitoring Branch monitors compliance with implementation conditions of Ministerial Statement conditions for development proposals assessed by the EPA for SO<sub>2</sub> emitting industry or residential development.</li> </ul>
<b>DEPARTMENT OF ENVIRONMENT AND CONSERVATION</b>
<b>Regional Operations Division</b> Goldfields Regional Office – Kalgoorlie Office
<ul style="list-style-type: none"> <li>• Audits and inspects licensed sulfur dioxide premises in the Goldfields region.</li> <li>• Renews and amends licences to reflect current Policy.</li> <li>• Receives summary of air quality data from industry groups on a monthly basis.</li> <li>• Receives specific advice from industry consistent with licence conditions of any breaches of the Policy..</li> <li>• If a breach of the Policy occurs then request a statement from Air Quality Management Branch for a summary of the event including, where possible, identification of the source of the breach.</li> <li>• Investigates breach of Policy and interviews the industry and key personnel. Collates industry meteorological data against Bureau of Meteorology data.</li> <li>• Once evidence is established this information is referred to the Environmental Enforcement Unit for necessary action.</li> <li>• Reviews the procedures employed by that industry if one or more "sulfur dioxide event" occurs in a calendar year with advice and assistance from Environmental Regulation Division, Licensing and Permitting Branch, and Air Quality Management Branch.</li> <li>• Respond to complaints from the public of a potential breaches and investigate if/as required.</li> <li>• Attain and collate information over a 24-hour period following complaints or breaches.</li> <li>• If there is a breach or exceedence ensure actions outlined in this document are followed</li> <li>• If an exceedence of 0.20ppm is determined, either through notification from industry or following investigations to complaints, the following parties will be advised - Deputy Director General Environment Director Regional Services, Director of Environmental Regulation, Director Environmental Enforcement Unit, Manager Corporate Communications Branch and Manager Pollution Response and Complaints Branch.</li> </ul>
<b>Office of the Deputy Director General Environment</b> Air Quality Management Branch
<ul style="list-style-type: none"> <li>• Receive quality assured ambient air quality data monthly under licence conditions from industry. This data is reviewed for compliance with the relevant EPP and placed directly into an ambient air database maintained by Air Quality Management Branch</li> </ul>



- If requested, support the Goldfields Region Manager with information pertaining to any exceedence of an ambient SO<sub>2</sub> standard. If there is an exceedence of 0.20ppm SO<sub>2</sub> or any of the concentrations listed in Clause 6 of the Policy, a report is generated and forwarded to assist the Manager, Goldfields Region's investigation.
- Upon request, provide technical and data support services to the Manager, Goldfields Region if the sulfur dioxide concentration of 0.20ppm is exceeded on more than the permitted number of days in a calendar year.
- Reports to the Office of the EPA if the sulfur dioxide concentration of 0.20ppm is exceeded.
- Provide technical and data support to Environmental Regulation Division, Industry Regulation Branch on Goldfield SO<sub>2</sub> exceedences.
- Develop and maintain software tools to analyse pollution events.
- Provide data to the public. A charge is levied to consultants; however, members of the public and bona fide students are provided data free of charge. The data in the form of hourly averaged graphs is provided at [https://secure.dec.wa.gov.au/airquality/Current\\_Air\\_Quality/Ambient\\_Monitoring\\_Data/Kalgoorlie](https://secure.dec.wa.gov.au/airquality/Current_Air_Quality/Ambient_Monitoring_Data/Kalgoorlie).

### **Corporate Services Division**

#### **Corporate Communications Branch & Legal Services Branch**

- The Information Centre of the Communications Branch provides general public access to a copy of the Policy and Regulations and legal maps, KALGJUN02, COOLJUN02, KAMBJUN02 and KURRJUN02.
- The Legal Services Branch provides advice to Department of Environment and Conservation staff on legal matters such as: licences and investigations; coordinates investigations of potential Tier 1 and 2 offences; and manages prosecutions for breaches.

### **Environmental Regulation Division**

#### **Inspection and Compliance Branch & Licensing and Permitting Branch**

- Inspection and Compliance Branch provides advice and support to the Goldfields Regional Offices in the event of pollution events and exceedences; and audits compliance with licence conditions issued under Part V of the Environmental Protection Act 1986.
- The Licensing and Permitting Branch may assist the Regional Services Division, Goldfields Regional Office, by offering general advice or, if extra resources are required, to review the procedures employed by that industry if one or more "sulfur dioxide event" occurs in a calendar year.

### **Environmental Enforcement Unit**

- Provides support and expertise in investigative skills for enforcement. Undertakes final coordination of prosecution briefs.

## **ENVIRONMENTAL PROTECTION AUTHORITY**

- Instigates the evaluation and review of the Policy and Regulations as directed by the Minister
- The Chairman will report any exceedences of the Policy to the Minister for the Environment.

## **LOCAL GOVERNMENT<sup>1</sup>**

- Refers any development proposals for residential development or sulfur dioxide emitting industries in the Goldfields region to the EPA for assessment.

## **INDUSTRY<sup>2</sup>**

- Operates according to licence issued by the Department of Environment and Conservation.
- Provides monitoring data and performance measurement to the Department of Environment and Conservation as requested in the licence.
- A company will immediately notify the Goldfields Regional Office of any exceedence or "sulfur dioxide event".
- A company will immediately notify the Goldfields Regional Office of investigations and corrective actions following an exceedence or "sulfur dioxide event".
- Manages emissions to conform to requirements in their licence, the Policy and Regulations.
- Actively evaluates monitoring data, keeps records and refines control strategies.

## **COMMUNITY**

- Reports any suspected exceedences to the Department of Environment and Conservation's Goldfields Regional Office.

## **STATE LAW PRINTER**

- Provides sales outlet for 2003 Policy and Regulations and amendments at 10 William Street, Perth.

<sup>1</sup> City of Kalgoorlie-Boulder, Town of Coolgardie, Town of Kambalda and Kurrawang Aboriginal Reserve

<sup>2</sup> Kalgoorlie Consolidated Gold Mines (KCGM), Kalgoorlie Nickel Smelter (KNS) and Kanowna Belle Gold Mine (KBGM)

## 5. Glossary

- **Ambient air** is the layer of air 5 metres thick immediately above and immediately surrounding, the external surfaces of any residential premises situated in a protected area and immediately above the surface of the remainder of a protected area.
- **At any one place** means a specified monitoring location.
- **Breach** means if the maximum permitted sulfur dioxide concentration (ppm) is exceeded or if the maximum number of days the sulfur dioxide concentration of 0.20ppm is exceeded.
- **Calendar day** means midnight to midnight.
- **Calendar year** means 1 January to 31 December.
- **Clock hour** means a sixty-minute period commencing on the hour.
- **Limit** means the concentration of sulfur dioxide, which must not be exceeded (applies to revoked 1992 Goldfields Policy and Regulations only).
- **Maximum allowable exceedence means** the maximum number of days the sulfur dioxide concentration of 0.20ppm can be exceeded in a particular year.
- **Maximum sulfur dioxide concentration permitted in the ambient air of a protected area** means the concentration of sulfur dioxide, which must not be exceeded.
- **Protected areas** are the four residential areas of the Goldfields region (Kalgoorlie-Boulder, Coolgardie, Kambalda and the Kurrawang Aboriginal Reserve) bordered on the maps in the policy. This is the area where the policy applies.
- **Significant industrial source** means industrial source from which the discharge of sulfur dioxide is, in the opinion of the Chief Executive Officer, such as to affect, or to be likely to affect, the protected areas.
- **Specified** means specified in the licence concerned.
- **Standard** means the concentration of sulfur dioxide, which it is desirable not to exceed (applies to 1992 Goldfields Policy only).
- **Sulfur dioxide concentration** means the sulfur dioxide concentration averaged over one clock hour.
- **Sulfur Dioxide Event** shall have the following meaning:

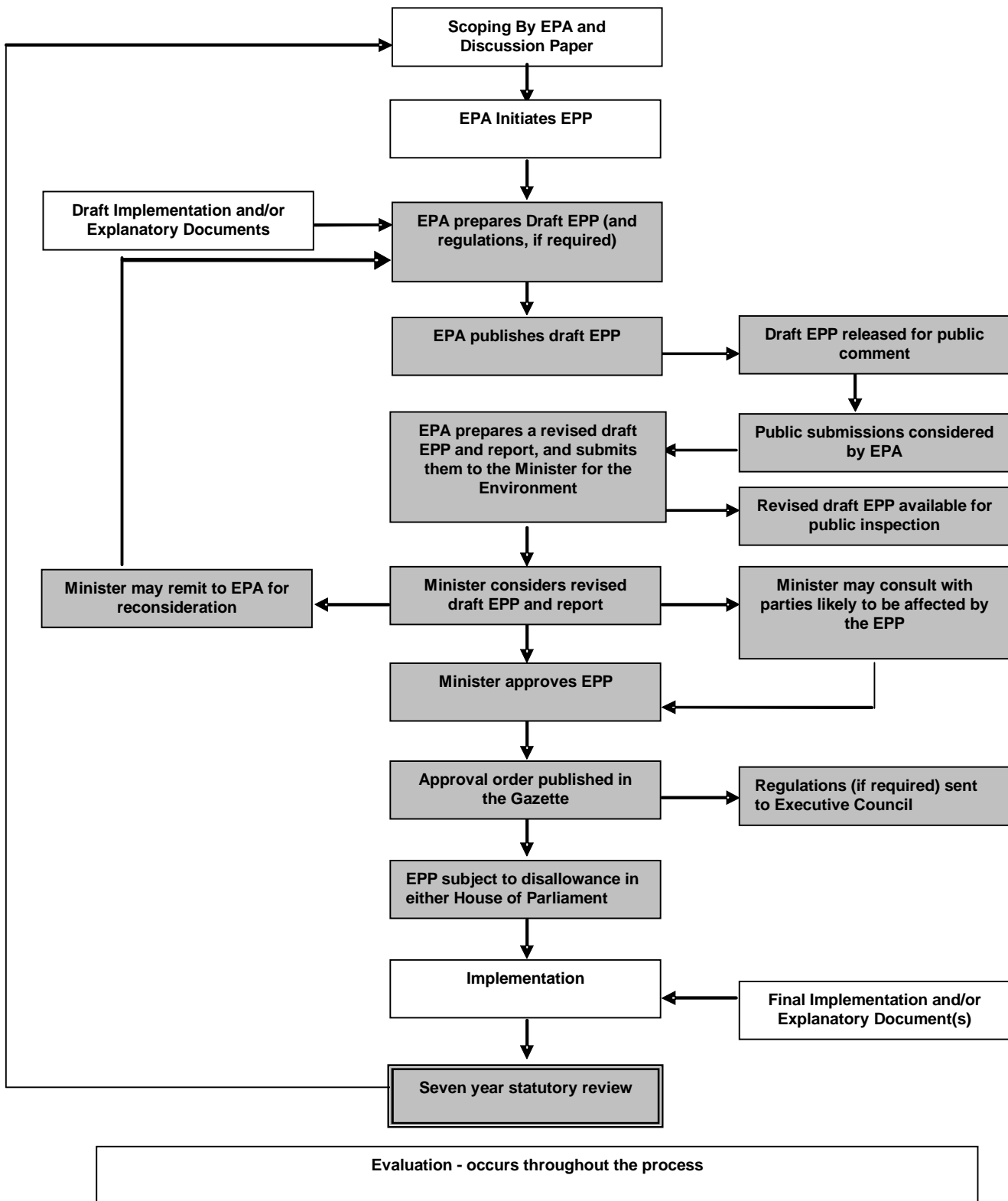
A sulfur dioxide event occurs when monitoring at a specified location records an exceedence of the sulfur dioxide concentration of 0.20ppm. If, within the same protected area as the aforementioned exceedence occurred, there is:

  - an exceedence of the sulfur dioxide concentration of 0.20ppm at any other specified monitoring location in the same clock hour; or,
  - an exceedence of the sulfur dioxide concentration of 0.20ppm at the same or any other specified monitoring location in the subsequent two clock hours; or,
  - both of the above;

then all of those exceedences shall be deemed to be part of the same single sulfur dioxide event. [This definition cannot be changed unless all sulfur dioxide emitting industries within the region and the Department agree. It will exist for the life of the Policy]

## 6. References

1. National Environment Protection Council, 1998. *National Environment Protection Measure for Ambient Air Quality, June 1998*. National Environment Protection Council Service Corporation. Australia.
2. EPA's Guidance Statement No 55 on 'Implementing Best Practice in Proposals submitted to the Environmental Impact Assessment Process', December 2003.



**Figure 1:**  
 Flow diagram of the Environmental Protection Policy approval process under the *Environmental Protection Act 1986* showing the statutory (light grey boxes) and non-statutory (white boxes) stages.

## Appendix One - The timeline from 1980 to 2003

1980 - 1987

Very high sulfur dioxide levels in Kalgoorlie-Boulder area with significant health impacts and no regulatory controls.

1987

Government Ministers, gold industries and government departments met to discuss control of sulfur dioxide. Bulletin 315 released - Report to the Minister on first draft POLICY.

1988

July - The Minister for the Environment declared first Policy to control sulfur dioxide concentrations in the air around the residential areas of Kalgoorlie-Boulder.

1991

February - The Department prosecuted Kalgoorlie Consolidated Gold Mines (KCGM) for pollution events caused by three Golden Mile gold roasters on 3 May 1989 and 22 June 1989.

1992

The Minister directed that the EPA review the 1988 Policy.

1993

January - Gazettal of the 1992 Goldfields Policy and Regulations, including residential areas of Kalgoorlie-Boulder, Kambalda, Coolgardie and Kurrawang Aboriginal Reserve.

1999

The Statutory 7-year review of the 1992 Policy and Regulations commenced. The draft 1999 Goldfields Policy and Regulations were released by the EPA for public comment.

2000

January - The revised draft Policy was published and transmitted to the Minister for the Environment.

May - Ministerial Consultation commenced on the Revised Draft. Comments through the Ministerial Consultation Phase were sought from key stakeholders.

July - The Department in Kalgoorlie briefed Key industry stakeholders.

December - A report on submissions and recommendations was submitted to the Minister for the Environment.

2001

November - At the request of the new Minister for the Environment and Heritage further consultation occurred with key stakeholders. The Minister also requested further advice from the EPA on the industry's responses to this consultation.

2002

April - A further revised policy was submitted to the Minister for the Environment and Heritage. The Minister approved the intent of the Policy and legal drafting of the Policy.

June - Legal drafting of the Policy and Regulations commenced.

August - Western Mining Corporation (now KNS) was prosecuted by the Department for exceeding sulfur dioxide emission limits in June 1996 from its Kalgoorlie smelter.

November - The Policy and its Regulations were transmitted to the Minister for the Environment and Heritage for Cabinet process and approval.

2003

March - Policy and Regulations are published in the *Government Gazette* and have the force of law as of that date.

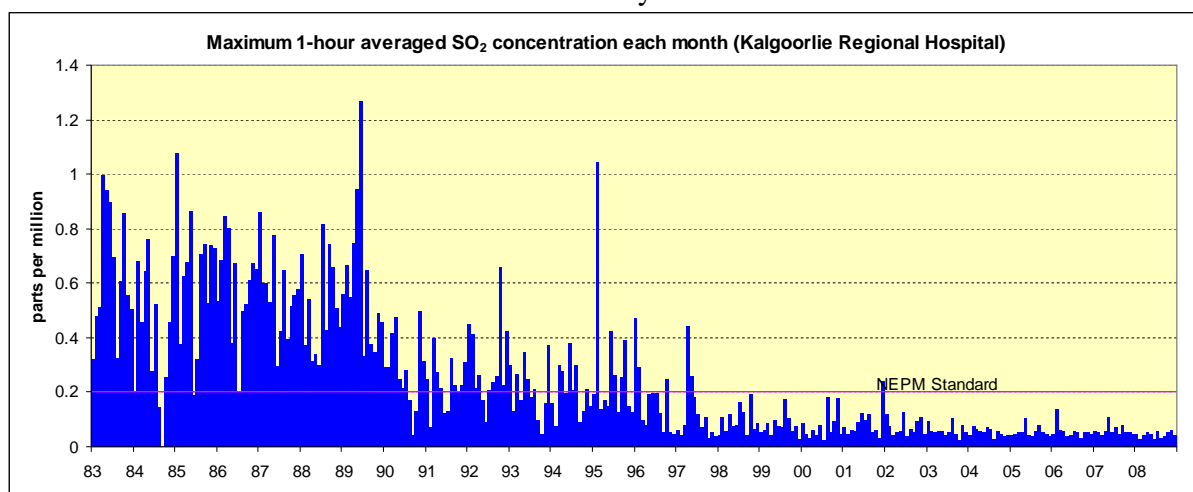
June - An Amended Policy was published in the *Government Gazette* (minor changes to map coordinates).

2009

December - EPA released a scoping document “Discussion Paper – Review of the Environmental Protection (Goldfields Residential Areas)(Sulfur Dioxide) Policy 2003”. This sought to determine the issues that should be addressed if the review was undertaken. The Discussion Paper unveiled a number of issues identified through community consultation. Based on this information the EPA recommended that the EPP remain in effect until there is evidence that the EPP needs to be amended.

2010

June - The Minister for Environment agreed with the EPA recommendations and directed the EPA not to review the EPP and that a notice to this effect be published in the *Government Gazette*. As a result of this action, the 2003 Goldfields EPP shall remain in force until otherwise directed by the Minister for Environment.



**Figure 2: Historical ambient air quality in the Goldfields Region**