

**DEPARTMENT OF ENVIRONMENT AND CONSERVATION
SUBMISSION TO
THE INQUIRY INTO THE CAUSE AND EXTENT OF LEAD POLLUTION IN
THE ESPERANCE AREA
BY THE EDUCATION AND HEALTH STANDING COMMITTEE OF THE
LEGISLATIVE ASSEMBLY
26 April 2007**

1. Introduction

1.1 *Department of Environment and Conservation*

The Department of Environment and Conservation (DEC) was established on 1 July 2006 bringing together the former Department of Environment¹ (DoE) and Department of Conservation and Land Management.

1.2 *Environmental Protection Act 1986*

One of DEC's functions is to administer the *Environmental Protection Act 1986* (EP Act). The EP Act is an Act to provide for, amongst other things, the "prevention, control and abatement of pollution".

In general terms, the EP Act seeks to achieve this through three courses:

1. Setting legal requirements that people and companies processing and handling potentially polluting materials must comply with, and making it an offence for them to cause pollution;

¹ The DoE and Water and Rivers Commission (WRC) operated together as a single agency between July 2001 and October 2005. Following the establishment the Department of Water (DoW) in October 2005, DoE operated as a separate agency to 30 June 2006, although certain functions of DoE, and subsequently DEC, continued to be delegated to DoW/WRC until September 2006).

2. Establishing functions for the Department to regulate Industries, principally through licensing certain premises, to seek to prevent pollution, and establishing powers to control and abate pollution (Part V of the Act – “Environmental regulation”); and
3. Establishing provisions for Environmental Impact Assessment of significant proposals (Part IV of the Act – “Environmental impact assessment”). Environmental Impact Assessment is undertaken by the Environmental Protection Authority (EPA) with the support of DEC. DEC also monitors compliance of conditions for projects which have been subject to Environmental Impact Assessment.

This submission focuses principally on items 1 and 2 as they relate to the Terms of Reference for the inquiry. DEC has been advised that the EPA is making a separate submission in relation to item 3.

1.3 Legal requirements on individuals and companies

The Act seeks to prevent pollution by:

- a) Making it an offence for any person to cause pollution or allow pollution to be caused; emitting or causing an unreasonable emission; or causing or allowing waste to be placed in any position that could reasonably be expected to gain access to the environment and in so gaining access would be likely to result in pollution. These are serious (Tier 1 and Tier 2) offences under the Act with maximum penalties from \$62,500 to \$500,000 and up to 5 years jail for individuals, and \$125,000 to \$1,000,000 for bodies corporate;
- b) Requiring that occupiers of certain premises processing or handling potentially polluting materials (referred to as “prescribed premises”) hold a valid licence under the Act;
- c) Requiring occupiers of prescribed premises to seek works approvals and/or licence amendment before carrying out any work or altering the method of operation or process carried out on the premises, or altering the type of materials or products used;

- d) Requiring licensees of prescribed premises to comply with licence conditions;
and
- e) Requiring the occupier of premises to notify DEC, as soon as practical, of the discharge of any waste that has or is likely to cause pollution.

To strengthen the obligation on individuals and companies not to cause pollution, the Government has commenced a process to increase the penalties for causing pollution and failing to meet the other requirements indicated above, to make them the toughest in Australia. A public discussion paper (DEC 2006) was released on this in May last year, and DEC is currently considering submissions received prior to proceeding to Government for approval for drafting amendments to the EP Act for introduction to Parliament. The proposed increases would see the maximum penalty for causing pollution increase to \$1,000,000 for individuals and \$5,000,000 for bodies corporate.

1.4 Functions of DEC under the EP Act

The EP Act establishes both specific and implied functions for DEC. In general terms these are to:

- a) assess licence and works approvals applications (after having advertised them and sought public comments) and decide whether to grant or refuse the licence or works approvals;
- b) set environmental conditions relating to the prevention, control, abatement or mitigation of pollution where it grants a licence or works approvals;
- c) carry out inspections and monitor compliance with environmental conditions;
and
- d) enforce powers where pollution has or is likely to occur, or where other requirements of the Act have been breached.

The Department is funded to undertake these functions (referred to as industry regulation) through the appropriation of revenue from fees for licences, works approvals and registrations². The Department does not receive separate Consolidated Funding for these functions.

DEC's industry regulation program is funded solely from net appropriated fees from licences, works approvals and registrations. Revenue from this source is budgeted at about \$8 million for 2006/2007.

Established FTE's for this program total about 75 staff, including both professional and administrative staff. Of these staff, 52 are located in the Department's Regional Services Division (27 metropolitan based and 25 in country areas, 4 of whom are currently in the South Coast Region), 19 in head office with an additional 3.5 FTE's in specialist technical areas such as marine, air quality and noise. It is stressed that whilst these are the established positions, there are approximately 14 vacancies at present both due to resignations and some positions not being currently funded. The South Coast Region currently has one vacancy.

Recent attempts to recruit staff at levels 5 and 6 (about 6-8 years experience) have been problematic with no suitable external applicants.

DEC regulates some 2500 prescribed premises (860 licensed and 1670 registered premises). The quantum of the licence fee for individual premises varies depending on the type of premises, and the nature and extent of planned discharges, to generally reflect the degree of regulation required. Higher fees apply to industries with higher planned discharges, recognising the greater regulation generally required. For example, DEC expends considerable regulatory effort for the Wagerup Alumina Refinery due to the significant emissions from the plant. The Wagerup Alumina Refinery licence fee is currently \$36,500, reflecting the higher regulation applied.

As ports do not have planned discharges, they are generally subject to low licence fees. The annual licence fee for the Esperance Port Authority is currently \$1,125.

² Some premises only require registration without prescriptive conditions applied and are managed through general regulations under the Act.

Premises which are required to be licensed under the EP Act are called 'prescribed premises', the categories for which are listed in Schedule 1 of the *Environmental Protection Regulations 1987* (see attachment 1). Premises listed in Part 2 of that schedule are exempt from holding a licence if they are registered, as many of these premises are covered by regulations. Premises range in size and complexity from the Woodside Gas plant in Dampier to concrete batching plants. As stated above, there are approximately 2500 prescribed premises in Western Australia, about 860 of which are licensed and 1670 are registered.

Prescribed premises cover those industrial activities which are considered to present a significant environmental risk. Prescribed premises which pose a greater level of risk are subject to licensing. Some prescribed premises which pose a lower risk are only subject to registration as they do not require a prescriptive conditional licence. There are a large number and range of other industrial activities, which are not prescribed, but are still required to comply with other elements of the EP Act, including regulations, and must be operated so as not to cause unreasonable emissions, environmental harm or pollution. While these are not directly regulated by DEC through the administration of a licence or registration, significant staff time goes into responding to complaints associated with these industries.

DEC has established a risk rating process to determine the level of environmental risk each licensed premises poses and thus how frequently it should be inspected to determine licence compliance and environmental performance (see attachment 2).

Application of the risk rating process results in one of four classifications, being high, medium high, medium and low. Registered premises are not risk rated but are dealt with as a separate group. Of the 860 licensed premises, about 130 are classified as high or medium high risk, 180 as medium risk and 550 as low risk.

DEC has adopted a hierarchy of frequency of inspections of all licensed premises based on the risk assessed. It has then set targets for the numbers of inspection to be carried out annually in each risk area based on the resources available in the industry regulation program. More frequent inspections in any risk category would be undertaken if circumstances arose which warranted an inspection, eg a series of complaints, or elevated monitoring results.

DEC policy requires that high and medium high risk premises are to be inspected annually and the target is 100%. Medium risk premises are to be inspected once every three years but the target set annually is for only 50% of these to be completed. Low risk premises are to be inspected every five years but the target set is for only 20% of these to be done. A similar inspection frequency and target is set for registered premises. These targets recognise the available staff resources to conduct inspections and recognise that these same staff also carry out assessments of works approvals, new and renewed licences, investigations and enforcement actions, advice and guidance to the community and industry, and investigate all complaints received relating to pollution or environmental harm, whether or not they relate to a licensed premises. In addition to the aforementioned tasks, the same officers also provide regional input to the EPA's assessment process.

The Esperance port premises was assessed as a medium risk premises and accordingly scheduled for compliance inspections every three years.

The resources boom is significantly impacting on DEC's ability to conduct scheduled operations. The numbers of active works approvals and licences have increased by 50% and 12% respectively in the last nine months in the South Coast Region.

The achievement of Inspection targets varies across the State. The average performance for DEC over the last 9 months is 28% of the annual target set, which is reflective of limited resources and organisation changes that have occurred in the last two years.

DEC is facing difficulties in recruiting and retaining experienced staff, particularly in regional centres. While this is a common problem in Western Australia with the resources boom, it is particularly acute in industry regulation. Experienced regulatory staff are highly sought after by private enterprise to coordinate environmental approvals and undertake company environmental compliance.

DEC is currently completing a skills competence audit of industry regulation staff throughout the State and assessing current licensing and compliance training programs. A competency based training program will then be developed to extend, enhance or replace existing training programs. DEC has developed a comprehensive enforcement training program and has also developed and implemented first responder training for pollution incidents. Therefore particular

focus will be on enhancing the existing licensing training and developing practical inspection training.

1.5 DEC's investigations of the Esperance lead issue

DEC is currently undertaking investigations into the cause and extent of the lead contamination at Esperance, and whether there have been any offences under the EP Act. If possible offences are found to have occurred, the Department will take enforcement action in accordance with its Enforcement and Prosecution Policy.

The Department is also reviewing the performance of its functions, and the adequacy of its processes, in relation to regulation of the Esperance Port Authority's operations.

This submission to the inquiry is based on the information which has been gathered to date in the investigations and review. DEC will provide any further information it considers relevant to the inquiry which it finds from subsequent investigations and review.

2. Terms of Reference (a) how the environmental approval process for the transport and export of pelletised lead enabled the transport and export of granulated lead

2.1 Environmental Impact Assessment of the Magellan lead project

Details of the Environmental Impact Assessment (under Part IV of the EP Act) of the proposal by Magellan Metals Pty Ltd to mine and export lead carbonate are set out in a separate submission by the EPA.

DEC is also commissioning an independent review of Magellan Metals' compliance with the conditions of approval under Part IV of the EP Act.

2.2 Licencing of the Esperance Port Authority to ship lead carbonate under Part V of the EP Act

Esperance port includes prescribed premises under categories relating to loading and unloading of bulk material, and as such the Port Authority is required to hold a licence under Part V of the EP Act.

DEC received an application from the Port Authority in September 2004 to amend its licence to allow the export of lead carbonate (see attachment 3). In applying to amend the licence, the Esperance Port Authority stated that "Magellan has advised that as a further measure to prevent dust emissions, the lead carbonate will be produced in moist, small "agglomerates" (or balls) < 10mm for shipment." The Port Authority also advised that the conveyor system to be used for the loading "is enclosed and water sprays are used for dust suppression". It also stated that "we will be updating both our environmental and health and safety management plans to include the handling of lead carbonate." and "We will also expand our current dust gauge monitoring program, as outlined in our environmental licence, to include sampling for lead."

The application was assessed on the basis of the information provided and the licence was amended in November 2004 (see attachment 4) to provide for the export of "pelleted lead carbonate" and to include lead in the range of parameters to be monitored.

In assessing and approving the application, DEC noted that the Port Authority had advised that, as part of its ongoing commitment to community involvement, a Port Development Consultative Committee meeting was held on 24 September 2004 at which Magellan Metals gave a presentation to the committee about the lead carbonate shipping. The Port Authority also provided a copy of its media release of 31 August 2004 on the proposal to export lead carbonate, with its licence application (see attachment 3). In the media release the Port Authority stated:

"The Port will uphold the highest operational standards if it were to export the lead carbonate product."

"The lead carbonate would be handled through the port's existing enclosed conveyor system. On and off-site monitoring programs would also be expanded to include monitoring for lead, to ensure there is no impact outside the port."

"To minimise potential dust associated with handling of the product, Magellan will be producing the lead carbonate in small "agglomerates" or balls, about half a centimetre in diameter."

It also stated that lead carbonate would only be exported for about two years after which time it will be a solid lead product.

Under section 53 of the EP Act the occupier of a prescribed premises "who, if to do so may cause an omission, or alter the nature or volume of the waste", "...alters the method of operation of any trade, or of any process" or "alters the type of materials or products used" commits an offence unless he does so in accordance with (i) a works approval, (ii) a licence, or (iii) a requirement contained in a closure notice or an environmental protection notice. This section of the Act is intended to ensure that any change to materials or methods of operation (eg. from moist pellets to material containing a significant component of dust) is subject to due assessment in terms of its potential to cause emissions and to enable a decision to be made as to whether the change should be permitted, and if so, the appropriate conditions which should be applied to the works approval and subsequent amendment to the licence.

While DEC's investigations are still continuing, from information it has gained to date, it appears that the Port Authority may have been receiving lead carbonate material with a significant dust component since the latter part of 2005.

DEC has no record of an application for a works approval or licence amendment, or notification from the Port Authority, to reflect the apparent change in type of material being shipped from "pelleted", to a form containing a significant dust component, as required by section 53 of the EP Act.

In essence, DEC does not consider that the existing licence under Part V of the EP Act provides approval for the export of lead carbonate material in a granulated form with a significant dust component.

The Department is also not aware of any request by Magellan Metals to change the nature of the lead carbonate material approved to be transported and shipped under

Its approval under Part IV of the EP Act (refer to the separate submission by the EPA).

The soundness and properness of DEC's post-approval regulation of the port in relation to shipment of lead carbonate, including its frequency and efficacy of inspections and audits, is addressed further below in this submission in relation to Terms of Reference (e).

3. Terms of Reference (b) *the effectiveness of dust monitoring and reporting in relation to lead levels in the area and the adequacy of the response to those reported levels*

The Port Authority's licence (attachment 4) requires it to collect airborne particulate samples from dust gauges at seven locations outside the port on a three monthly basis in February, May, August and November each year. These are referred to as depositional gauges. The samples are required to be analysed by a National Association of Testing Authorities certified laboratory and reported in milligrams per square metre per month ($\text{mg}/\text{m}^2/\text{month}$). The licence requires the results to be presented in an annual Environmental Monitoring Report due to be submitted by 1 November each year (attachment 4).

At the time the Port Authority applied for the licence amendment to include the export of lead carbonate, DEC considered that the dust depositional gauges would be an adequate mechanism for dust monitoring. These would supply a quantitative measure of any lead dust occurring outside the port area due to transport and shipment of the lead carbonate, which would indicate if a review was required of the type and frequency of monitoring, or a change in the requirements for managing lead concentrate export. This position was based on the lead carbonate being in the form of small moist agglomerates, that it was loaded via a closed materials handling system, that an environmental management plan for the port was being upgraded, and the assurances given by the Port Authority as part of its licence application.

DEC received the Port Authority's October 2004 – September 2005 Environmental Monitoring Report on 4 November 2005. The port began receiving rail loads of lead

carbonate in April 2005, and began shipping material in July 2005. Two shipments (3 July and 30 August) occurred in the 2004/05 report period.

The 2004/05 report included lead deposition results for November 2004 and February 2005 which were prior to receiving or shipping lead carbonate, and for May 2005 and August 2005 which were after receiving and shipping commenced. The lead deposition gauge results are summarised in Table 6, page 6, of the report (attachment 5).

Unfortunately, the analysis method used for the February 2005 samples had an imprecise detection limit, and the results could only be presented as 'less than 15 mg/m²/month'. The results for May 2005 and August 2005 indicated some detection of lead dust (0.5 to 3.5 mg/m²/month) but, with limited baseline monitoring prior to receipt of the lead carbonate, these were not considered exceptional.

A preliminary October 2005 – September 2006 Environmental Monitoring Report was received from the Port Authority on 31 October 2006. The report was not complete and did not contain all results required by the licence.

The preliminary 2005/06 report summarised lead deposition monitoring results in Table 6, page 6, of the report (attachment 6). Importantly the report did not include results for February 2006.

The preliminary 2005/06 report indicated that lead dust levels had increased in November 2005 and May 2006 (the May 2006 results in particular indicated two results at 14 and 28 mg/m²/month) but levels were generally low in August 2006. The Department reviewed the report and was concerned that it was deficient, and wrote to the Port Authority on 22 December 2006 requesting a final report with all the required monitoring data. The covering letter from the Port Authority submitting the preliminary 2005/06 report did not highlight or draw attention to the elevated lead dust levels.

The final 2005/06 Environmental Monitoring Report was received on 31 January 2007. The report contained the February 2006 monitoring results which included a high reading of 42 mg/m²/month. This both confirmed and increased the Department's concerns based on the preliminary report and DEC wrote to the Port

Authority on 27 February 2007 requiring it to provide urgent advice by 14 March 2007 on upgrading its air quality monitoring program.

While the licence strictly only requires the Port Authority to report to DEC annually, the Department considers that with sound and responsible environmental practices, samples would be analysed promptly and should any samples indicate an issue of concern, results would be reported to DEC immediately. This is reinforced in the preamble in the licence. Section 72 of the EP Act also places a legal obligation on occupiers of premises to notify DEC if a discharge of waste has occurred and has caused or is likely to cause pollution.

DEC considers that, had the monitoring program been adequately carried out, the February 2006 results should have been available by early March 2006, and DEC should have been advised at that stage. This would have enabled appropriate actions to be taken at that time including a review of the lead loading facility and operation to establish how the high lead dust levels had occurred and what early action could be taken to address those issues to improve handling facilities and practices, if the loading should cease or if the licence conditions required amendment.

Notwithstanding that the licensed monitoring program should have enabled detection of lead dust outside the port area and for action to have been taken sooner, DEC acknowledges that a more comprehensive monitoring program should have been implemented.

The Department recognised the possible need for this in 2005 and requested advice from the Department of Health on 25 August 2005 regarding monitoring requirements for the port. The Department of Health provided advice in September 2005 (attachment 7) which recommended that additional monitoring should be undertaken to that of the depositional gauges. While the depositional gauges would be able to detect fugitive lead dust outside the port area due to both the transport and shipping of lead, the Department of Health recommended that additional monitoring was required to measure lead concentrations in ambient air to enable appropriate public health risk assessment.

Due to staff changes and departmental rearrangements at the time and a communications failure between regional and central groups, this critical advice was not acted upon. There was not a continuity of licensing officers during this period.

The soundness and properness of DEC's regulation of the port in relation to shipment of lead carbonate, including the licence requirements for lead dust monitoring and the Department's response to the Environmental Monitoring Reports, are addressed further below in this submission in relation to Terms of Reference (e).

4. Terms of Reference (c) *the extent to which handling and other practices at Esperance Port gave rise to the benthic lead levels in the harbour*

4.1 DEC marine sediment sampling

As part of its initial sampling program of the extent of lead at Esperance undertaken in March 2007, DEC collected six marine sediment samples from a five square metre plot under the Esperance port's discharge pipe. While this is only a small area, the samples contained extremely high lead (and nickel) levels as summarised below.

Guideline levels for marine sediment quality	50 – 220 mg/kg
Lead concentration of marine sediments under the discharge pipe	3,600 – 29,000 mg/kg

4.2 *Sampling of fish and crustaceans*

DEC also arranged for preliminary sampling and testing of fish caught in the area, and crustaceans and other shellfish in the area. DEC understands that the Department of Health and the Department of Fisheries subsequently arranged the testing of 40 fish caught near the port that have been shown to be safe to eat. One herring did have high lead levels, but the Department of Health considered it was an isolated result and did not pose a health risk.

Testing of crustaceans and other shellfish is still continuing and people have been advised that these should not be collected from the port area.

4.3 *Requirement on the Port Authority to undertake comprehensive investigation*

On 26 March 2007, (see attachment 8), DEC required the Port Authority to develop a Sampling and Analysis Program (SAP) in accordance with established guidelines to examine the extent of lead (and nickel) contamination in the port, within 21 days.

A draft SAP was submitted to DEC on 18 April and is being reviewed by an independent accredited contaminated sites auditor. DEC officers are also assessing the draft SAP. When it has been modified to meet DEC specifications, DEC will instruct the Port Authority to proceed with the SAP as soon as possible.

Based on the findings of the SAP, DEC will require appropriate action to be taken. This work is being conducted to the requirements of the DEC guidelines for contaminated sites management.

The Port Authority was also required to explain how the high lead (and nickel) levels had entered the port waters and how the Port Authority would ensure no further lead (or nickel) enters the water in the future. The Port Authority replied on 29 March 2007 (see attachment 9) advising that it believed the contamination "may primarily be a result of the severe storm in January 2007". It further stated that now it is "aware of this contamination it will be reporting it under Section 72, waste discharge notification".

The report submitted to DEC outlining the proposed SAP included results of marine sediment monitoring undertaken by the Port Authority over the last few years, within the inner port (berth pockets) and outside the harbour. While DEC is still reviewing its records, it is concerned that the results include significant levels of lead contamination of sediments which appear to have not previously been reported to DEC. The results in Table 1.1, pages 3 and 4 of the report (attachment 10), indicate levels of lead in the sediments within the berth pockets exceeding low guideline values (Interim Sediment Quality Guideline – Low, ANZECC/ARMCANZ 2000) in September 2005, and significantly exceeding high guideline values (Interim Sediment Quality Guideline – Low, ANZECC/ARMCANZ 2000) in October 2006, before the storm in January 2007.

DEC is investigating this matter to see whether there has been any possible offence under the EP Act, and if so, will act in accordance with its Enforcement and Prosecution Policy.

5. Terms of Reference (d) *whether the Esperance Port Authority properly exercised its responsibilities in relation to the potential lead pollution*

5.1 *Obligations on the Port Authority under the EP Act*

As indicated in the Introduction to this submission, the EP Act places a number of obligations on individuals and companies processing and/or handling potentially polluting materials. These include:

- a) Requiring that occupiers of prescribed premises hold a valid licence under the Act;
- b) Requiring occupiers of prescribed premises to seek works approvals and/or licence amendment before carrying out any work or altering the method of

operation or process carried on the premises, or altering the type of materials or products used;

- c) Requiring licensees of prescribed premises to comply with licence conditions;
- d) Requiring the occupier of premises to notify DEC, as soon as practical, of the discharge of any waste that has or is likely to cause pollution; and
- e) Making it an offence for any person to cause pollution or allow pollution to be caused; emitting or causing an unreasonable emission; or causing or allowing waste to be placed in any position that could reasonably be expected to gain access to the environment and in so gaining access would be likely to result in pollution.

Esperance port includes prescribed premises under categories relating to loading and unloading of bulk material, and as such, the Port Authority is required to hold a licence under Part V of the EP Act.

DEC is investigating whether the Port Authority has complied with its obligations under the EP Act and whether there have been any possible offences.

5.2 Nature of the lead carbonate shipped

A primary issue for DEC is the nature of the lead carbonate shipped. As indicated above in relation to Terms of Reference (a), based on information provided to DEC by the Port Authority in its licence application, the licence was assessed and intended to apply only to lead carbonate shipped in a pelleted form (moist small agglomerates (or balls)) to avoid dust.

While DEC's investigations are still continuing, from information it has gained to date, it appears that the Port Authority may have been receiving and shipping lead carbonate material with a significant dust component since the latter part of 2005. It appears the extent of dust associated with the material may have been exacerbated during the summer with warmer conditions.

DEC has no record of an application for a works approval or licence amendment, or notification from the Port Authority, to reflect the apparent increased potential for dust due to the change in nature of the material shipped. While DEC is still investigating, it considers it would have been consistent with the intent of the licence and the EP Act for the Port Authority to have notified the Department at that time. It appears that shipping of lead carbonate material with a possibly significant dust component has continued since that time, with the dust component being greatest during summer.

5.3 Adequacy of monitoring and reporting

Another primary concern of DEC is the adequacy of the Port Authority's monitoring and reporting. As indicated above in relation to Terms of Reference (b), DEC understands the Port Authority did not receive the results of its lead deposition monitoring for February 2006 until 17 January 2007, and these were not provided to DEC until 31 January 2007. This monitoring indicated elevated lead dust levels at a monitor outside the port and should have been notified to DEC much sooner. DEC considers that with reasonable environmental management practice, the February 2006 monitoring results should have been available by early March 2006, and that it would have been appropriate for DEC to have been notified at that time.

5.4 Adequacy of the port's facilities and operations to prevent the release of lead dust

DEC is investigating possible causes for the elevated lead dust levels recorded at, and outside, the port. Notwithstanding that the lead carbonate material appears to have had a significant dust component beyond that intended to be covered by the licence approval, it also appears that some elements of the operations at the port may have contributed to the potential for release of lead dust.

DEC is particularly investigating:

- what steps were taken to use water sprays or other suppressants to prevent dust;

- whether drier lead carbonate material was 'mixed' with moister lead carbonate material in the sheds, particularly the open-sided receival shed, which could have caused the release of dust;
- whether the Port Authority reasonably adhered to its Dust Management Plan required under condition A1 of its licence;
- the type of ships loaded, and whether there were adequate measures implemented to prevent the escape of dust during the loading of material into hulls; and
- whether reasonable steps were taken to locate and repair any gaps or holes in the storage or loading facilities, from which dust could escape.

5.5 Increasing Licensee awareness of their legal environmental obligations

To promote increased awareness by licensees of their legal environmental obligations, in September 2006 the Minister for the Environment determined that licensees should be required to submit an annual audit compliance statement to DEC declaring compliance with, and disclosing any potential breaches of, all conditions of the licence. These statements are to be signed by the Chief Executive Officer (or most senior executive) of the organisation holding the licence.

DEC is currently finalising the administrative actions necessary to enable implementation of this action and this should occur shortly.

6. Terms of Reference (e) whether the Department of Environment and Conservation's responsibilities in relation to the Esperance Port Authority processes and procedures, including the legal and regulatory framework, were adequate and properly exercised

DEC is presently reviewing the performance of its functions, and adequacy of its

processes, in relation to regulation of the Esperance Port Authority's operations
This is particularly focussing on:

1. the soundness of the licence to require appropriate processes, practices and procedures to prevent, and monitor for, lead dust, and to require reporting of any observed or recorded lead dust;
2. the frequency and efficacy of the Department's inspections and audits of the port's operations in relation to its requirements under the licence and EP Act; and
3. the Department's review of, and response to, the Port Authority's annual Environmental Monitoring Report.

While these reviews are still continuing, the following information and comments are provided in relation to this Term of Reference based on DEC's current assessments.

6.1 Soundness of the licence

In 2003 the Department (then DoE) commissioned an independent strategic review of its approach and practices for setting industry licence conditions *Western Australian Licence Conditions Independent Strategic Review* (Welker Consulting (2003). The review recommended reforms aimed at ensuring licence conditions were clear, consistent, enforceable and focussed on activities that pose a significant environmental risk and that a documented and transparent process was used to justify why conditions were or were not imposed on licenses. The Department has been progressively implementing the recommendations of this review as part of an overall reform program for its industry regulation program.

A key element of the Welker review reforms was the proposal for the Department to prepare an Environmental Assessment Report for each licensed premises identifying planned and potential emissions, environmental risks of these, and conditions to establish monitoring requirements, limits and reporting.

The Department has been implementing this practice in licensing new premises, and progressively applying it to existing licensed premises based on a risk assessment approach.

The Esperance Port Authority licence has not yet been subject to the Environmental Assessment Report approach. The inspection report for the port in May 2005 identified the need a licence review to be done, however this did not occur. This was principally due to workload, skills capacity issues and departmental reorganisation. However, the Department acknowledges that a higher priority should have been afforded to this task, following the inclusion of lead carbonate as a product to be shipped. Issues which had previously been identified with the shipment of nickel should also have warranted a higher priority for review of this licence.

The Department has now initiated a review of the licence which will include an Environmental Assessment Report. This will include community engagement so that they have an opportunity to raise any issues they consider should be covered by licence conditions.

In carrying out the review, DEC will liaise with the Department of Health on public health risk and with the Port Authority regarding its planned future product handling intentions. DEC does not expect the revised licence will provide for the shipment of bulk lead carbonate (although a mechanism needs to be established for removing the existing lead carbonate stored in the shed at the port). DEC is aware that Magellan Metals is considering shipping lead carbonate in sealed containers but has not received a proposal for assessment.

Notwithstanding this, DEC is reviewing where the existing licence conditions did not meet best practice in respect of the shipment of lead carbonate. Based on current assessments, the following areas have been identified:

- the licence conditions should have required additional air quality monitoring in conjunction with the depositional monitors, to record ambient air lead concentrations; and
- the licence conditions could have included specific requirements regarding reporting to DEC of observations and recordings of elevated lead dust levels (although this should not be strictly necessary if licensees comply with their

obligations under section 72 of the EP Act requiring reporting of the discharge of waste that has, or is likely to, cause pollution as soon as practicable.

As recognised above in relation to Term of Reference (b), additional monitoring requirements in the licence would likely have assisted in exposing the release of lead dust earlier, although the required monitoring program was also capable of identifying the release of lead dust earlier if properly implemented and elevated levels reported promptly.

6.2 Frequency of the Department's licence inspections and audits

The inspection regime established by DEC policy requires various risk ratings to be allocated to licensed premises and on the basis of these ratings, premises are required to be inspected at a certain frequency. Premises rated with a high environmental risk and/or where there have been frequent complaints are generally allocated higher inspection frequency. The number and frequency of inspections is also related to the level of resources within DEC to carry out these inspections.

The risk rating for the Esperance Port at the time the licence was amended to include the shipping of lead carbonate was assessed as medium using the rating system. This was influenced by the fact that the approval for lead carbonate export was in the form of pellets, it was to be loaded via a closed conveyor system and there was an environmental management plan for the port including dust suppression systems and the licence required dust monitoring and reporting. Medium risk premises are scheduled for formal inspections and audits every three years. Additional site visits involving less formal inspections and audits may also occur at less than three yearly intervals, if particular matters are drawn to the Department's attention.

The rail transport of lead concentrate to the port and storage commenced in April 2005 and export of the first ship load occurred on 3 July 2005.

The port was subject to formal inspection in May 2005. Details of this inspection are discussed below in relation to the efficacy of DEC's inspection and audit processes.

The next DEC licence inspection occurred on 1 February 2007, 20 months after the first inspection. This was within the planned frequency for formal inspections and audits set for these premises. This inspection was prompted by concerns stemming from the Port Authority's annual Environmental Monitoring Report (as discussed below), and was timed to coincide with lead loading so that the operation could be observed.

While these inspections are within the planned schedule, it is a less than desirable frequency. Had the Port Authority had timely laboratory reports following the scheduled dust deposition monitoring sampling in February 2006, the Port Authority would have been able to report these high levels to DEC as required and DEC would have been in a position to take appropriate action including detailed inspections.

Due to the recent events, the risk rating for the port will be increased. DEC is currently sending an officer to Esperance to carry out surveillance of each nickel shipment. This will continue until DEC is satisfied that dust and odour issues are properly managed. The Department has also advertised to recruit an industry regulation officer to be based at Esperance, which will facilitate increased inspections and audits of the port in the future.

The Department does not consider it is possible to increase overall inspection frequencies for licensed premises within current resources.

6.3 The efficacy of the Department's licence inspections and audits

The issue has been raised as to whether the Department's inspections and audits of the Esperance port should have detected if material with a greater dust content than intended by the licence approval was being shipped.

As indicated above, an inspection of the port was undertaken in May 2005 and a report prepared (see attachment 11). While the Department's investigations of this inspection are still continuing, it presently understands the inspection did not include sighting the lead carbonate material due to occupational health and safety issues and unavailability of adequate specialised protective clothing and equipment. The inspection report does not record that any attention was drawn to the nature of the

lead carbonate material by the Port Authority. The report records a "New dust suppression compound used on products to bind them together (now on lead,...". The report also notes the preparation of a dust management plan (as required under conditions of licence) and that this had been lodged and was being reviewed. The inspection found that the Port Authority was in compliance with its licence and indicated that the licence would be reviewed and conditions updated where required.

The inspection and audit in February 2007 (see attachment 13) was primarily aimed at observing whether excessive dust was being caused during the loading. Again, due to occupational health and safety reasons, the inspector did not seek to enter the storage or loading facilities. No excessive dust was observed during the lead carbonate loading on 1 February 2007, and this was consistent with low concentration of lead dust recorded by high volume air sampling undertaken during the loading

To prevent such incidences in the future, the Department is in the process of commissioning an independent review of its regulatory compliance program, particularly in relation to the frequency, methodology and processes for inspections and audits, to endeavour to detect the handling of non-approved materials.

6.4 Review of, and response to, the Port Authority's annual Environmental Monitoring Report

DEC received the Port Authority's October 2004 – September 2005 Environmental Monitoring Report on 4 November 2005. The port began receiving rail loads of lead carbonate in April 2005, and shipping material in July 2005. Two shipments (3 July and 30 August) occurred in the 2004/05 report period.

The 2004/05 report included lead deposition results for November 2004 and February 2005 which were prior to receiving or shipping lead carbonate, and for May 2005 and August 2005 which were after receipt and shipping commenced. The lead depositional gauge results are summarised in Table 6, page 6, of the report (attachment 5)

Unfortunately, the analysis method used for the February 2005 samples had an imprecise detection limit, and the results could only be presented as 'less than 15 mg/m²/month'. The results for May 2005 and August 2005 indicated some detection of lead dust (0.5 to 3.5 mg/m²/month), but with limited baseline monitoring prior to receipt of the lead carbonate, these were not considered exceptional.

A preliminary October 2005 – September 2006 Environmental Monitoring Report was received on 31 October 2006. The report was not complete and did not contain all results required by the licence.

The preliminary 2005/06 report summarised lead deposition monitoring results in Table 6, page 6, of the report (attachment 6). Importantly the report did not include results for February 2006.

The preliminary 2005/06 report indicated that lead dust levels had increased in November 2005 and May 2006 (the May 2006 results, in particular, indicated two higher levels at 14 and 28 mg/m²/month), but levels were generally low in August 2006. The Department reviewed the report and was concerned it was deficient, and wrote to the Port Authority on 22 December 2006 requesting a final report with all the required monitoring data. This was carried out within the Department's normal timelines for reviewing such annual reports. The covering letter from the Port Authority submitting the preliminary 2005/06 report did not highlight or draw attention to the elevated lead dust levels.

DEC arranged for the inspection and audit of the loading on 1 February 2007, and for high volume air sampling equipment to be implemented during February 2007 in response to complaints about dust levels lodged during January 2007.

The final 2005/06 Environmental Monitoring Report was received on 31 January 2007. The report contained the February 2006 monitoring results which included a high reading of 42 mg/m²/month (attachment 13). This confirmed the Department's concerns based on the preliminary report and DEC wrote to the Port Authority on 27 February 2007 requiring it to provide urgent advice by 14 March 2007 on upgrading its air quality monitoring program. The letter also indicated the Department was liaising with the Department of Health and the Shire of Esperance in order to assess the possible risk to human health associated with dust emissions from the port.

While the Department should have taken firmer action based on results in the preliminary report, the need for immediate actions would have been far clearer had the full results required by the licence been provided in the annual Environmental Monitoring Report required by 31 October 2006. As indicated above in relation to Term of Reference (b), DEC considers that had the monitoring program been adequately carried out, the February 2006 results should have been available by early March 2006, and DEC should have been advised at that time.

6.5 Adequacy and properness of the exercise of DEC's functions

While its reviews are still continuing, DEC acknowledges that there were inadequacies in the exercise of its regulatory functions which, if improved, could have resulted in detection of the elevated lead dust levels at Esperance sooner than has occurred.

These limitations relate to both the level and capacity of resources available to the Department to undertake industry regulation, and to its processes. The Department has made recommendations below on actions to improve its industry regulation program in light of the Esperance lead issue.

In this instance, however, the exercise of DEC's regulatory functions could have been greatly assisted by notification, consistent with the intent of the licence and the EP Act, regarding change in the nature of the product and the consequential increase in dust level of the lead carbonate material being handled, and by reasonable implementation of the required monitoring program.

As indicated in the Introduction, the extent of DEC's industry regulation program is determined by revenue it receives from licence, works approvals and registration fees. In this case, the port's annual licence fee was \$1,125 per year.

The EP Act places a primary obligation on individuals and companies handling potentially polluting materials to prevent pollution. This is in accord with the generally greater resources and capacity of industry to manage their operations to avoid pollution. The Department understands that in this instance, the value of lead carbonate being shipped through the port was in excess of \$100 million per year, and the Port Authority's total revenue was around \$27 million per year.

7. *Investigation into bird deaths*

Eight birds (honeyeaters, wattle birds and a miner) found dead in Esperance were collected by DEC Esperance District Office staff and sent to the Department of Agriculture and Food Animal Health Laboratory (AHL) on 20 December 2006 for examination to determine the cause of death. Over 100 birds were collected and frozen, but on the advice of AHL that frozen birds were not suitable for histopathology and because the fridge space was urgently required for fire fighter stores, these birds were discarded.

The AHL first conducted histopathological tests for diseases such as avian influenza, West Nile virus and Newcastle's disease. When the results proved negative, on 11 January 2007 tissue samples were sent by AHL to the Chemistry Centre WA (CCWA) for toxicological analysis, which included tests for heavy metals and the pesticides organochlorines, organophosphates and pyrethroids. CCWA provided interim results to AHL on 22 January 2007 showing high lead levels were found in the samples.

After consultation with CCWA, AHL advised DEC of the results on 30 January 2007 and indicated that it was not known if these levels were significant or not for the Esperance area and as such the results were inconclusive. AHL requested several control samples be obtained from healthy birds collected from the Esperance area, but outside the townsite so that normal lead levels in those species could be determined.

DEC collected specimens in the first week in February, mostly by mist net so that the samples were not contaminated by lead shot, and couriered them to AHL.

On 6 March 2007 DEC received an interim report from AHL concluding that the sampled birds collected in December 2006 had died from lead poisoning.

From 7-15 March (and longer) a second mass bird death occurred in Esperance involving more than 200 purple-crowned lorikeets. Samples of birds, native tree flowers and leaves were sent to AHL by DEC. AHL sent samples onto CCWA and

CCWA reported on 13 March 2007 that the lorikeet samples contained high lead levels.

AHL advised DEC on 4 April 2007 of the test results showing high lead levels present on feathers, leaves and flowers.

DEC received a report from AHL collating all the results on the purple-crowned lorikeet deaths on 20 April 2007.

8. *Recommendations*

In this section of the submission, the Department offers some preliminary recommendations. The Department may wish to revise or add to these preliminary recommendations during the course of the inquiry.

8.1 *Experience and skills capacity for industry regulation*

DEC has experienced a considerable loss of industry regulation experience and skills over the last ten years. DEC now has considerable difficulties attracting and retaining skilled and experienced staff to the industry regulation program.

Technical and tertiary training in Western Australia does not readily address the requirements of industry regulation, making selection of vocationally compatible staff difficult. This is compounded by the fact that the Department is competing against industry for the limited available experienced and skilled people. The Department's increased decentralisation of its industry regulation functions to regions in 2003 has also presented recruitment difficulties.

DEC has developed a comprehensive enforcement training program with the Joondalup Police Academy and is currently reviewing its licensing and inspection training to both develop skills early in the employment of staff, and to increase the incentive to remain in the agency. The former DoE established two specialist 'flying squads' based in Perth - the Pollution Response Unit and the Environmental Enforcement Unit, which are deployed anywhere in the State to respond to incidents.

These have proven to be highly effective and efficient in responding to pollution incidences, but more needs to be done to provide for proactive improvement of licensing for high and medium risk premises, and undertaking inspections and audits, to prevent incidences occurring.

1. DEC should reassess its regional licensing and central technical and administrative capability, and the respective roles of both, to provide a stronger industry regulatory program to protect the environment.
2. DEC should seek to establish an experienced and skilled 'flying squad' that can be deployed to regions to undertake detailed specialist compliance inspections and assess compliance of licensees' annual monitoring reports for high and medium risk premises.
3. DEC should seek to increase its central technical capability to provide stronger technical specialist support to the preparation and administration of industry licences and works approvals for high and medium risk premises.
4. DEC should commission an independent review of its inspection and audits framework and processes and implement necessary changes to ensure these meet best practice (The Department has commenced preparation of a Terms of Reference for this review and is liaising with counterpart agencies in NSW and Victoria on appropriate experts to undertake this review).
5. DEC should implement specialist training for industry regulation staff with a particular focus on compliance inspection and enforcement.
6. Licence, works approvals and registration fees should be increased to provide funding to implement Recommendations 2, 3 and 5.

8.2 *Improved risk assessment of licensed premises*

DEC currently regulates 2500 industry premises prescribed in the EP Act, of which 860 require a prescriptive licence that is reissued every one to five years. These premises range from having a low to high risk of causing pollution and therefore

require a range of regulatory responses, commensurate with the level of risk and the available regulatory resources. DEC already has a basic risk management protocol to assist in determining the prescription of conditions applied to particular premises and the level of compliance inspection to ensure the conditions are appropriate to manage the risk and are adhered to. However, the current DEC industry regulation framework failed to detect issues at Esperance leading to pollution of the environment.

7. DEC should investigate and implement a stronger risk management system for industry regulation in WA to ensure that the risks of environmental pollution from industry are low.
8. DEC should proceed to ensure that all licences that are rated as high or medium risk have had a detailed Environmental Assessment Report prepared for them as soon as practicable.

8.3 Increased awareness and obligation on licensees to report non compliance with conditions

It is impractical for regulatory authorities to be able to prevent the law being broken in all cases. It is impractical to expect DEC to be in a position to prevent industry from breaching licences or experiencing accidents and emergencies where pollution of the environment may occur on all occasions. The holder of any licence or permit is expected to comply with the governing laws and to comply with conditions applied to the licence or permit. There is a responsibility on any licence or permit holder. While it is inappropriate to restate statutory obligations in a conditional licence, it may be appropriate to reinforce these obligations in associated documentation.

9. DEC should reinforce, in licence letters of transmittal, obligations on licensees to report potential breaches of conditions and exceedences of emission and discharge limits as soon as practicable.
10. DEC should implement the requirement for licensees to submit an annual audit compliance statement declaring compliance with, and disclosing any

potential breaches of, all conditions of the licence, as soon as practical. These statements should be signed by the Chief Executive Officer (or most senior executive) of the organisation holding the licence.

8.4 Environmental regulation of ports

Ports are particularly problematic facilities to regulate and manage as they usually contain a range of facilities, only some of which are prescribed premises under the EP Act, and some of which are owned and operated by tenants of the Port Authorities. Ports are currently subject to only minimal licensing fees, typically one or a few thousand dollars. There is a need to both strength the environmental management responsibilities of Port Authorities and improve the licensing of ports.

11. Port Authorities in WA should be required to instigate and publicly report on an ambient air quality monitoring program for their entire area and in adjacent sensitive receptor areas to ensure that dust does not impact on the environment or community outside the port area.
12. Port Authorities should be required to prepare and implement environmental management plans under part V of the *Port Authorities Act 1999* to ensure that all activities within their area do not cause pollution.
13. The *Port Authorities Act 1999* should be amended to require environmental management plans prepared under part V of that Act to be approved by the CEO defined in the *Environmental Protection Act 1986*.
14. Licensing fees for prescribed premises at ports should be reviewed and increased to enable greater level of regulation of ports, consistent with their environmental risks.

References

ANZECC / ARMCANZ 2000, Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council / Agriculture and Resource Management Council of Australia and New Zealand, National Water Quality Management Strategy No. 4.

DEC 2006, Proposed Amendments to the *Environmental Protection Act 1986*, Amendments under consideration to improve work ability and enforceability of the Act, A public discussion paper, Department of Environment and Conservation, July 2006.

Welker 2003, Western Australian Licence Conditions Independent Strategic Review, Welker Consulting.

List of attachments

No	Title
1	Schedule 1 of the <i>Environmental Protection Regulations 1987</i>
2	DEC risk rating for licensed premises
3	2004 Esperance Port Authority licence amendment application
4	2004 Esperance Port Authority licence
5	Extract from Esperance Port Authority 2004/05 monitoring report
6	Extract from Esperance Port Authority Preliminary 2005/06 monitoring report dated 26 October 2006
7	Department of Health letter September 2005 to DEC
8	DEC letter to Esperance Port Authority 26 March 2007
9	Esperance Port Authority letter to DEC 29 March 2007
10	Extract from Esperance Port Authority report to DEC on marine sediment sampling and analysis program
11	DEC inspection report May 2005
12	DEC inspection report February 2007
13	Esperance Port Authority Final 2005/06 monitoring report