

Esperance Port Authority

**Submissions to the Education and Health Standing
Committee Inquiry into the Cause and Extent of Lead
Pollution in the Esperance Area**

Esperance Port Authority

Submissions to the Education and Health Standing Committee Inquiry into the Cause and Extent of Lead Pollution in the Esperance Area

- A How the environmental approval process for the transport and export of pelletised lead enabled the transport and export of granulated lead.**
1. The environmental approval process involved the transport and export of lead carbonate concentrate.
 2. The then Department of Environment (now the Department of Environment and Conservation) ("**DEC**"), knew that Magellan Metals Pty Ltd ("**Magellan**") proposed to transport lead carbonate concentrate through the Esperance port and that it would agglomerate the lead carbonate concentrate into small, moist balls as an additional dust suppression measure.
 3. In August 2004, Magellan informed the DEC that it would shortly start dispatching lead concentrate but that, as a further measure to prevent rogue dust emissions, the product would be produced in moist small agglomerates for shipment (**see A1**)
 4. Magellan had already obtained environmental approval for the transport of lead carbonate concentrate through the Geraldton port.
 5. Magellan subsequently advised the DEC that the lead concentrate product to be transported through Esperance for the first three years was the same as that approved for Geraldton. It also reiterated that it would agglomerate the lead carbonate concentrate into small, moist balls as an additional dust suppression measure (**see A2**).
 6. The Esperance Port Authority ("**the Authority**") foreshadowed to the DEC in August 2004 that it was preparing to apply to amend its licence to include handling of lead carbonate (**see A3**).
 7. Subsequent prominent local press on the possible export of lead through the Esperance port recognised the significant benefits to Esperance and also drew attention to the fact that the lead carbonate was a white powder and that Magellan would produce it in small, moist agglomerates or balls to minimise potential dust associated with handling (**see A4**).
 8. The Authority formally applied to the DEC on 28 September 2004 to amend its licence to allow the transport of lead concentrate through the Esperance port (**see A5**).
 9. In that application the Authority had also advised the DEC of the nature of the lead carbonate concentrate and of the dust suppression step employed by Magellan to agglomerate the product.
 10. The agglomeration of lead carbonate was not one of the Authority's dust control measures, or something that it had control over.
 11. The DEC provided the Authority with a draft amended licence to transport lead carbonate for its consideration but, for reasons that were not explained, included the phrase "*pelleted lead carbonate*" on one occasion in the licence preamble, though not elsewhere in the licence or the licence conditions pursuant to which the Authority is audited (**see A6**).
 12. The Authority raised concerns with the DEC about the use of the word "pelleted" and reiterated that the lead concentrate was not going to be a pellet, but agglomerated. It was

agreed that the Authority would seek advice from Magellan that the phrase "*pelleted lead carbonate*" was an appropriate description for its product (see A7).

13. Magellan replied to the Authority that the product could be called either "*pelleted*" or "*granulated*" (see A7).
14. The Authority forwarded Magellan's view to the DEC and indicated that, as a result, the phrase "*pelleted*" could remain in the preamble (see A7).
15. Hence, the DEC was aware that the phrase "*pelleted lead carbonate*" in the Authority's licence preamble was intended to describe lead carbonate concentrate.
16. The DEC issued the Authority with the amended licence to transport lead carbonate through Esperance (Licence #: 5099/9, File #: L6/74), which was in the same form as the draft, on 16 November 2004. (see A8)
17. At various stages in the process, the Authority openly consulted with the Esperance community on its plans to transport lead concentrate through the port.
18. The Authority issued a press release on 31 August 2004. The Authority informed the Port Development Consultative Committee, which represents the Esperance community and includes prominent Esperance community members, that the lead would be in concentrate form (see A9).
19. Following receipt of the amended licence the Authority also conducted a Public Open Day on 18 December 2004, where Authority personnel made themselves available to discuss any questions people might have.
20. The first train of lead carbonate from Magellan arrived at the port on 4 April 2005.
21. The Authority inspected the lead product upon its arrival, which revealed that the small moist balls had degraded during transport, such that the product resembled damp concentrate. However, there was little difference between the degraded product and that shown to members of the Authority during a previous visit to the Magellan mine site (see A10).
22. It was also clear that the product was at a good moisture content, which is a key factor impacting on dust, and it was shown to handle very well. The fact that the agglomerated product had partially degraded in transit did not adversely impact on dust issues.
23. The DEC conducted an on site licence inspection of the port on 26 May 2005. By this time sixteen train loads of lead carbonate had already been delivered to the port and were stored in the lead storage shed.
24. The DEC's inspection included a tour of the port and it concluded that the Authority was in full compliance with its licence (see A11).
25. The first lead shipment from the port was on 3 July 2005. Since that time, the Authority has shipped Magellan's lead carbonate product from the port on an additional twenty one occasions, spanning 30 August 2005 to 4 March 2007.
26. The Authority's amended licence had the same expiry date as the superseded licence, and was due to expire on 6 October 2006. At this time the DEC were issuing licences for a period of two years, although the port was required to pay a licence fee annually. The Authority applied to renew its licence on 27 July 2006 (see A12), which was approved by the DEC on 28 September 2006 (see A13).

27. The DEC conducted another licence inspection on 1 February 2007, which, as with the previous inspection, involved an initial inspection meeting to discuss compliance with licence conditions, followed by a site inspection.
28. In response to a specific request by the DEC, this inspection and site tour occurred whilst the Authority was loading a lead shipment.
29. The DEC subsequently informed the Authority, on 14 February 2007, that it was "*found to be compliant with all conditions of licence 5099/10*", except for an obligation to report environmental monitoring data, which was "*being handled via separate correspondence.*" (see A14)
30. The Authority believes that all parties understood that Magellan were producing lead carbonate concentrate for 2 to 3 years. That concentrate required moisture as part of dust suppression measures. The agglomeration process was partially unsuccessful due to degradation during travel. The agglomerated or partially agglomerated concentrate was variously described as granules or pellets. The agglomeration process was not ultimately a success which meant that more moisture had to be applied at the mine and at the port. That still meant that the concentrate was in the same "granular" form.
31. The transport of all concentrate requires the careful application of moisture and a well planned dust suppression strategy.

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

1. It is an Air Pollution Control Condition of the Authority's licence to conduct three monthly monitoring for lead dust, amongst other things, and to arrange appropriate analysis by a NATA accredited laboratory (see B1).
2. In accordance with its licence, the Authority records and provides these monitoring results to the DEC in an Annual Environmental Monitoring Report. Prior to the licence issue on 7 October 2003, the port was required to submit reports on a six-monthly basis. In the issue on 7 October 2003, this requirement was changed to a requirement to report annually.
3. The Authority's monitoring programme was developed in consultation with the DEC and the Authority conducts monitoring in accordance with DEC requirements, including with respect to substances monitored and frequency of monitoring.
4. To monitor lead dust, the Authority uses strategically placed dust gauges around the port and Esperance community to collect dust for analysis.
5. As outlined below in Terms of Reference "E", the DEC sought and obtained advice from the Department of Health ("DoH") on possible lead health issues at the port in mid-2005. This advice was not provided to the Authority at the time. If it had been, the Authority would have considered using the more sensitive high volume samplers to monitor possible fugitive lead dust emissions from the port.
6. Prior to the 2006 Annual Environmental Report, the Authority had submitted its reports on time and the DEC had not expressed any concern about the monitoring results.
7. Although the preliminary report was submitted on time, the final 2006 Annual Environmental Report was provided to the DEC approximately two months late, due to delays of up to ten months in obtaining data from the analysing laboratory. The Authority provided all data on lead levels to the DEC at the earliest opportunity.
8. The Authority informed the DEC of the delay with obtaining results from the laboratory it used to analyse dust samples on 5 October 2006 and requested an extension to submit its Annual Environmental Monitoring Report (see B2).
9. The DEC refused and the Authority submitted a preliminary Annual Environmental Monitoring Report on 26 October 2006 with data missing, including lead levels, that had not yet been provided to it by the laboratory (see B3).
10. Since 2001 the Authority has used Analytical Reference Laboratory (WA) Pty Ltd ("ARL") to analyse its dust gauge monitoring in accordance with the Authority's licence conditions. In this case there was a substantial delay in obtaining results from ARL. The February 2006 samples were received by ARL in March 2006, but despite prompting, the Authority did not receive the results until 17 January 2007. These results were included in the Annual Environmental Report provided to the DEC by their deadline of 31 January 2007 (see B4). During this period the Authority made extensive enquiries, and eventually located, another laboratory with suitable accreditation, to utilise in the future.
11. As set out in Terms of Reference "A", the DEC subsequently informed the Authority as part of the licence inspection process that it had not complied with its licence condition requiring annual reporting of environmental monitoring by 1 November each year, but that this was being dealt with via separate correspondence (see B3).
12. That separate correspondence was received 4 weeks after the Authority sent the Annual Environmental Report. Comments by the DEC on the finalised 2006 Annual Environmental

Monitoring Report acknowledged that the missing data did not include lead results. The DEC also noted a small number of isolated lead dust results that showed levels above the historical average, those being from the February and May 2006 samples (see B5).

13. In its Annual Environmental Report, at 4.3 (see B4), the Authority provided some possible context for the isolated lead levels that were above historical levels (being previous to any transportation of lead). It also outlined improvements that were being made to the heavy metals transport system.
14. The absence of an apparent trend or cluster of high levels, did not trigger significant concern, but in any event the Authority had already taken the step of commissioning an external environmental audit, as it was very conscious of its responsibilities in this area. That audit had been approved by the Board and was waiting availability of the chosen consultant. In addition the Authority convened a meeting of these companies involved in the export of concentrate to stress the importance of appropriate moisture levels as the most important dust control measure.
15. By the time correspondence was received from the DEC in early March, expressing concern about the readings above historical levels, (see B6) there was already considerable publicity drawing a possible link between bird deaths and the lead transport, and the Authority announced on 12 March 2007 that lead shipments would cease immediately.
16. Other than those isolated lead results above historical levels, the monitoring program has demonstrated very low levels of lead dust in the port and Esperance community.
17. The Authority has, at all times, adopted what it believed to be an appropriate response to monitored lead levels. This has been to continue to monitor levels, to inform the DEC annually of monitoring results and, where possible, to further mitigate dust generation whilst handling lead at the port. At the time of the events that prompted this Inquiry, it was in the process of obtaining an independent audit of its environmental monitoring.

C The extent to which handling and other practices at Esperance Port gave rise to the Benthic lead levels in the harbour

1. The Authority believes that handling and operational practices have not directly given rise to any raised benthic lead levels in the harbour sediment.
2. The Authority has been monitoring lead levels in the seabed and around the harbour since 2002. The Authority has produced annual reports of this data since 2004 in accordance with its internal "Marine Sediment Monitoring Procedure" (see C1). Some monitoring was required under the port's ministerial statement, but the port undertook to monitor sediments within its berth pockets as additional monitoring to determine extent of contamination in the harbour.
3. In September 2006, the Authority engaged Oceanica to review its sediment monitoring program and include additional monitoring sites to determine more accurately the movement of contaminated sediments within the inner harbour, ie the berth pockets and turning basin.
4. Sediment sampling was undertaken in October 2006, and monitoring was undertaken in the vicinity of the outfall pipe from the heavy metals handling area.
5. On 14 March 2007 the DEC Pollution Response officers used a local diver to collect six samples from a five square meter area of sediment under a discharge pipe in shallow water at the outlet near berth One. These samples showed lead level readings between 3,600 mg/kg and 29,000 mg/kg (see C2).
6. The Authority attributes the localised raised lead levels to flooding during the severe storm on 4 January 2007 and overflow of the heavy metals area sump, where any spilt material from unloading of kibbles into the hopper, is washed.
7. The Authority believes that these results are not representative of sediment levels within the harbour. Prior to these isolated readings, no lead levels in sediment in the vicinity of the discharge pipe exceeded the Australian guidelines of 220 mg/kg (see C3).
8. The Authority was requested by the DEC to prepare a wider and more comprehensive report to determine the extent of the contamination. The Authority has engaged an independent company, Oceanica, to undertake a detailed analysis and investigation of the harbour in response to the DEC's request (see C4).

D Whether the Esperance Port Authority properly exercised its responsibilities in relation to the potential lead pollution

1. Prior to transport of any lead carbonate through the port, it was a condition of the Authority's licence to develop a Dust Management Plan for submission to the DEC, which was required to set out how the Authority would manage dust generated by lead carbonate handling.
2. The Authority provided a Dust Management Plan to the DEC on 30 March 2005 for its review, which addressed lead carbonate handling (see D1). The Dust Management Plan was essentially a section of the Authority's overall Environmental Management Plan.
3. The DEC accepted the Authority's Dust Management Plan and did not require any changes to the proposed handling of lead carbonate.
4. Prior to transport of lead carbonate the Authority undertook a review of all handling procedures for metal concentrates and commenced an ongoing process of upgrading those procedures to minimise potential dust generation or emissions.
5. The Authority also briefed the Port Development Consultative Committee, which represents the Esperance community and includes prominent Esperance community members, on issues surrounding the transport of lead carbonate concentrate through the Port, including monitoring, OH&S issues and minimisation of dust generation (see D2).
6. The Authority sent relevant operational and managerial personnel to Magellan's Wiluna lead mine to examine the lead product and Magellan's handling procedures and to familiarise themselves with how to safely handle lead and minimise dust generation.
7. Operational staff highlighted a number of concerns arising from this Magellan site visit relating to upholding the Authority's high standards to protect the community and environment of Esperance. Operational staff stated that they would only give their consent to a proposal to handle lead carbonate concentrate if the Authority could develop safe operating systems that would not threaten these standards (see D3)
8. The Authority and its Board agreed that the transport of lead would not proceed until the operational staff and employees were satisfied that appropriate handling procedures were in place. Operational staff were sent to Port Pirie to assist in refining these procedures.
9. The Board met on 13 occasions in 2004 and 2005 at which the lead issues were discussed in some detail. Following the visit to Magellan the Board continued to explore with management the actions that would be required to achieve best practice in lead transportation. This included very close liaison with employees, the community, and independent experts.
10. Through this process the Authority ultimately addressed the concerns of operational staff and the transport of lead was able to commence, in keeping with the Authority's high standards.
11. A key focus of the Authority's efforts to minimise dust generation during handling was to manage the moisture content of the lead carbonate. This required a balance between obtaining a sufficiently moist product to minimise dust whilst not exceeding the Transportable Moisture Limit so that it would be rejected by the ship as being too moist. If too moist, concentrate can shift in the hold and be a risk to the ship.
12. The Authority strives to maintain product moisture content somewhere between 7% and 9% at all times, but particularly during handling.
13. Initial deliveries of lead from Magellan suffered from a lack of consistency with regard to moisture content, as it was either too wet or too dry. The Authority informed Magellan that it

required better consistency of moisture levels. Operational staff were instructed to send back any product that was too hard to handle and this was done on a number of occasions.

14. After initial teething problems, the product that arrived at the Port was at good moisture content and handled very well with minimal dust.
15. The first lead shipment from the port was on 3 July 2005. The lead product handled well and was in good condition. There were no visible dust emissions whilst loading, with minimal dust generation as the product landed in the ship's hold (see D4).
16. During all handling of lead carbonate, and particularly during loading of lead shipments, the Authority closely reviewed all stages of handling for any visible evidence of dust generation.
17. If product was too dry and generated too much dust during handling the Authority employed a system of sprinklers and mist generators throughout the lead outloading system to wet the product and reduce dust generation.
18. If wetting the product did not rapidly alleviate dust generation, operators were under strict instructions to stop loading the ship until the problem was rectified. In those situations, loading did not recommence until the Authority was satisfied that dust generation had been appropriately managed. This sometimes involved delaying loading until a train arrived from the mine site with higher moisture levels. The product was blended with product in the shed until suitable to load.
19. The Dust Management Plan outlines a number of additional measures taken to minimise dust generation (see D1).
20. The Authority also trialled the use of a citrus-based dust suppressant called polo-citrus on the heavy metals outloading circuit although this was found to be unsuccessful.
21. The Authority also upgraded protective measures for its workers, including by requiring additional specified personal protective equipment for particular areas around the Port, such as the lead storage shed. It also carried out blood testing of all its employees.
22. Throughout the period when the Authority handled lead it undertook all monitoring and testing activities required by its licence.
23. Monitoring for lead carbonate, from before commencement of shipping lead carbonate, included ongoing sediment monitoring at defined locations within the harbour and dust gauge monitoring at specified positions within the Esperance community and within the port.
24. In addition, the Authority undertook a Rainwater Tank Monitoring Program, which included tank analysis prior to the first transportation of lead carbonate (see D5).
25. As outlined in relation to Terms of Reference "B", the Authority communicated its monitoring results to the DEC in its Annual Environmental Report, in accordance with its licence obligations.
26. The Authority also engaged independent expertise prior to commencement of lead carbonate handling at the port to assist it to assess potential risks and appropriate mitigation strategies for dust generation in handling the agglomerated lead concentrate.
27. Kim Riseborough, an OH&S consultant, was engaged to review handling procedures and to advise on dust mitigation strategies and attended to OH&S issues. He provided a report to the Authority on 23 March 2005 (see D6).

28. Dr Brian Galton-Fenzi, an Occupational and Public Health Physician, was contracted by the Authority to visit the Port and to talk with employees about lead health risks and also provided a report to the Authority on 8 April 2005 concerning lead handling health risks (see D7).
29. A summary presentation in October 2006 by Colin Stewart (CEO) to Esperance Port Authority Board, at their request, of heavy metals handling (nickel & lead) issues demonstrates the Board's proactive interest in these matters, the diligence of the Authority in seeking to adopt best practice and the significant improvements made since the commencement of lead handling in July 2005(see D8).
30. At the licence inspections conducted in 2005 and 2007, referred to in Terms of Reference "A" and "E", the DEC did not formally or informally raise any concerns about dust generation from handling of lead carbonate. In the 2007 inspection, this included visual inspection by the DEC representative of the loading of lead carbonate onto a ship.
31. As soon as the Authority received advice from the DEC that lead carbonate from the port was a potential cause of bird deaths in the Esperance area it acted to safeguard the interests of the community and environment, in accordance with good precautionary practice, and voluntarily suspended all lead shipments until further notice (see D9).
32. The DEC subsequently applied a prevention notice on lead carbonate handling at the port, which remains in effect (see D10).

E Whether the Department of Environment and Conservation's responsibilities in relation to the Esperance Port Authority processes, practices and procedures, including the legal and regulatory framework, were adequate and properly exercised

1. The DEC conducted a licence inspection at the port shortly after the first trains carrying lead carbonate had arrived, but prior to the first shipment. That audit found that the Authority was in compliance with its licence conditions (see E1).
2. The DEC next conducted a licence inspection of the Authority in February 2007 and again found the Authority to be in compliance with all conditions other than some reporting obligations, which were being dealt with in separate correspondence (see E2).
3. For most of the period that the Authority was transporting lead, it had an open and cooperative relationship with relevant contacts at the DEC. There was frequent communication, the vast bulk of which was informal and by either telephone or email.
4. This relationship was complicated by the fact that there were a number of changes in personnel and location of the department, which meant that established knowledge was lost and new contacts had to be educated on issues relevant to port operations.
5. The Authority also experienced difficulty in obtaining required amendments to its licence.
6. The Authority requested the DEC make a number of substantive amendments to its licence upon renewal of the licence in August 2005 (see E3). For example, this included an amendment to the licence preamble to reflect the increased throughput of iron ore from 4 to 8 million tonnes per annum.
7. These amendments were not made by the DEC until after the Authority repeated its request on renewal of its licence in July 2006 (see E4).
8. In contrast to the DEC, the Authority has had only very limited contact with the Department of Health ("DoH"), including on the recent lead issues at the Port.
9. The Authority does not have any day-to-day access to the DoH and does not have a particular contact within the department to raise any specific concerns with.
10. Unlike the DEC, no DoH representative has come out to the Port for a site visit to familiarise themselves with operations.
11. The little direct contact that the Authority has had with the DoH has been through the DEC. For example, in relation to rainwater tank monitoring sometime in 2004 when the DEC sought their advice on water quality issues.
12. The Authority has recently become aware that DEC and DoH corresponded on issues relevant to lead handling at the port, but at the time the Authority was not included in those exchanges.
13. For example, the DEC undertook to seek advice from the DoH on possible lead health issues at the port in August 2005 (see E5).
14. The DoH responded to the DEC on 21 September 2005. However, the Authority was not aware of this advice, and was not provided with a copy by the DEC, until 27 February 2007, when it was annexed to a letter concerning the Authority's Annual Environmental Monitoring Report (see E6).
15. The Authority can see the need for coordinating the roles amongst the various government departments and would strongly support some sort of coordinated industry approach to this.

16. The Authority has committed to working with other agencies in an open and consultative manner and is disappointed that many of the existing investigations have not included consultation with the Authority, as the Authority believes with its local knowledge and understanding of the Port this would have greatly assisted in the investigations.

F That the committee is given power to investigate any other issues pertinent to the cause and extent of lead pollution in the Esperance area

1. The Authority makes no submission in relation to this term of reference.