Environment Protection Authority

Remediation order

Section 23 of the Contaminated Land Management Act 1997

23008

Service: By Registered Mail to address shown in Environment Protection Authority records

Pasminco Cockle Creek Smelter Pty Limited [under deed of Company Arrangement]
(ACN 000 083 670)
P.O. Box 42
BOOLAROO NSW 2284

Attention: Mr Paul Arndt, General Manager

Background

A. On 12 November 2001 Pasminco Limited (Administrator Appointed) notified the Environment Protection Authority ("EPA") that:
   - contamination at the site known locally as the Pasminco Cockle Creek Smelter located in Boolaroo, New South Wales presented a significant risk of harm based on an assessment against the criteria detailed in the *Contaminated Land Management Act 1997* (the Act).

B. On 19 March 2002 the EPA notified Pasminco Limited (Administrator Appointed) that it had concluded that contamination on and emitting from the site of the Pasminco Cockle Creek Smelter presented a significant risk of harm.

C. On 10 September 2002 the EPA declared the following land (collectively referred to as "the *site*") as a remediation site under s.21 of the Act:

   - the land on which the Pasminco Cockle Creek Smelter is located, being Lot 201 DP 805914 in the Local Government Area of Lake Macquarie, ("the *premises*");
   - that part of the bed sediments of the southern part of Cockle Creek in line with the northern boundary of the Pasminco Cockle Creek Smelter (Lot 201 DP805914) and continuing south to Cockle Bay ("the Cockle Creek site"); and
   - the bed sediments of Cockle Bay in North Lake Macquarie extending from Cockle Creek and enclosed by a straight line from the public wharf marked in dark brown on the DLWC map and the foreshore of Cockle Bay at the end of Aspinall Street, Booragul ("the Cockle Bay site").

D. The *site* has been found by the EPA to be contaminated, in particular with lead, cadmium and zinc in such a way as to present a significant risk of harm.

E. The EPA has considered the matters in s.9 of the Act and found, in relation to the *premises*, that:

- The lead, cadmium and zinc would not be normally present in groundwater at the *premises* at the elevated levels found;
- The lead, cadmium and zinc are present in groundwater at the *premises* and at locations close to the boundary of the *premises* at concentrations significantly exceeding the 95% trigger values for the protection of aquatic ecosystems as outlined in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* ANZECC and ARMCANZ, October 2000;
- The lead, cadmium and zinc are persistent in and toxic to aquatic ecosystems;
- Lead is also recognised as being bioaccumulative in humans and the environment;
- Contaminants from the *premises* are migrating in air to nearby residential areas, in groundwater towards Cockle Creek and in surface water to Cockle Creek, which discharges to Cockle Bay. The lead, cadmium and zinc have been deposited in the sediments at the Cockle Creek site and Cockle Bay site;

F. The EPA has found that there is a significant risk that:

- Harm is being caused to the biota that is in contact with the contaminated groundwater at and in the vicinity of the *premises*;
- Harm may be caused to residents in parts of the suburbs of Boolaroo, Speers Point and Argenton ("the residential area") as a result of offsite migration of airborne contaminants from the *premises*;
- Harm may be caused to humans through inhalation, ingestion or dermal contact with the lead, cadmium and zinc deposited in the residential area as a result of the operation of the smelter and its associated waste stockpiles;
- Harm may be caused to humans from the increased cancer risk associated with the operation of the smelter;
- Harm may be caused to humans from the effects of elevated levels of lead in blood detected in children in the residential area; and
- Harm may be caused to plants in contact with the lead, cadmium and zinc deposited in the residential area.

G. The EPA considers that the significant risk of harm arises from emissions associated with the ongoing operation of the smelter and with materials stored or deposited on the *premises*.

H. Pasminco Cockle Creek Smelter Pty Limited (Subject to Deed of Company Arrangement) ACN 000 083 670 ('the Company') is a person principally responsible for the contamination at and emitting from the *premises*. The Company is also the registered owner of the *premises* and has owned the *premises* for over 50 years.

I. In October 2002 the Company announced that it intended to end its smelter operations at the *premises* in 4 to 6 years time.

J. The EPA issued a draft remediation order to the Company on 21 November 2002 and the Company provided comments on the draft on 19 December 2002 and 31 January 2003.

K. On 25 March 2003 the Company publicly announced that the smelter will close by 30 September 2003.

L. The EPA issued a revised draft remediation order to the Company on 17 April 2003 and the Company provided comments on the revised draft on 29 April 2003 and 11 June 2003.

M. The EPA has considered all submissions received in response to the remediation declaration as to whether a remediation order should be made and all comments by the Company on the draft remediation order.

N. There are no other identified persons who are required to be served a copy of this Order relating to the *premises* for the purposes of s.23(4) of the Act.

O. By this Order, the EPA requires the Company, being a person having principal responsibility for the contamination referred to above, to prepare remediation plans and carry out remediation actions as specified below:

Remediation of *premises*

1. The Company must:
   (a) reduce the migration via the air of arsenic, cadmium and lead from point and diffuse sources on the *premises* to the suburbs of Boolaroo, Speer's Point and Argenton;
   (b) reduce the migration of lead, zinc, cadmium and manganese from the *premises* via surface water and groundwater; and
   (c) develop and implement strategies for the remediation of contaminants (including those referred to in (a) and (b)) that are on or in soil and in groundwater and surface water at the *premises*, being strategies that are appropriate for the current land use as detailed in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* and *Guidelines for NSW Site Auditor Scheme,* June 1998 in relation to soil contamination and *Australian and New Zealand Guidelines for Fresh and Marine Water Quality ANZECC and ARMCANZ,* October 2000 in relation to contamination in groundwater and surface waters,

   so that the *premises* are no longer contaminated in such a way as to present a significant risk of harm. The manner in which the Company must achieve the outcomes identified in paragraphs 1(a), (b) and (c) above is set out at paragraphs 2-18 inclusive below.

2. The Company must remediate the *premises* by taking the steps specified in this Order within the time limits specified in the Order.

Note: The EPA may issue further remediation orders if necessary. The need for further orders will be determined by the actions taken by the Company to comply with this Order, by the results of those actions and by the conditions of any development consent required to remediate the *premises.*

Shut down

3. In the context of the Company's announcement that it intends closing the smelter by September 2003, by 1 November 2003, the Company must prevent the emission of lead and solid particulates from point and fugitive emission sources associated with the day-to-day operation of the smelter by completing the shut-

down of smelting operations on the *premises* at the raw materials storage shed, proportioning plant, sinter plant, charge preparation plant and the Imperial Smelter Furnace.

Compilation of inventory

4. The Company must utilise an appropriately qualified and experienced person to compile a comprehensive inventory of raw materials, products, process catalysts and wastes that are anticipated to be at the *premises* on completion of the shut down ('the inventory').

5. The inventory must list the substances that contain arsenic, cadmium, copper, lead, mercury and zinc or other substances (excluding laboratory reagents) that the Company reasonably considers are, or are likely to be, contributing to the significant risk of harm and must rank them in order of what the Company considers to be the importance of their contribution.

6. The inventory must, for each listed substance:
    (a) provide the 'common name' (or if no common name exists the chemical name) of the substance and a brief description of the composition of each substance;
    (b) identify the source and location of the substance on the *premises*;
    (c) estimate the quantity of the substance where it is located;
    (d) evaluate and document the reasoning as to the potential (as low, medium or high) for the substance to escape to the atmosphere from the *premises* or to contaminate soil, surface water or groundwater on the *premises*;
    (e) recommend any actions that the Company could begin to take within 3 months from the date of completion of the inventory, or in any event prior to closure of the smelting operations, to mitigate or control the significant risk of harm and which focus on the lawful use, reprocessing, containment or disposal of the substance ('short-term actions'); and
    (f) specify the date on which each recommended short-term action could commence and the date by which it could be reasonably completed.

7. Within 2 months of the date of this Order **(1 September 2003),** the Company must submit a preliminary inventory, reporting on all those items identified in accordance with paragraphs 4 and 5 of this Order and provide the information specified in paragraphs 6 (a) to (c) of this Order, in the form of a written report, to the EPA's Director, Contaminated Sites

8. Within 4 months of the date of this Order **(1 November 2003),** the Company must submit the completed inventory, reporting on those items identified in accordance with paragraphs 4 and 5 of this Order and provide all information specified in paragraphs 6 in the form of a written report, to the EPA's Director, Contaminated Sites.

Implementation of works from the inventory

9. The Company must commence implementation of any short term action identified in the inventory no later than one month after being notified in writing of the EPA's approval of that action, or if a later date is specified in the inventory for that action, by that date.

Note: The EPA may issue a further remediation order requiring other short-term action to be taken or requiring action to be completed by a different time.

Preparation of a Remedial Action Plan

10. The Company must engage an appropriately qualified and experienced contaminated land consultant to prepare a detailed Remedial Action Plan (RAP) for remediation of the contamination at the *premises*.

    The RAP must take into account the requirements detailed in the EPA's publication titled *Guidelines for Consultants Reporting on Contaminated Sites,* dated November 1997, as it relates to remedial action plans, and must:

(a) Discuss the options for remediation action (in addition to the short-term actions recommended by the inventory) that could be undertaken to reduce off-site migration of contamination as required by paragraph 1 above (Remediation of *premises*);

(b) Discuss in detail the extent to which these remediation actions would address the contamination:

(c) Discuss the costs to the Company of implementing each option identified above and how the degree of risk arising from the contamination at and from the *premises* will be reduced by implementing that option;

(d) Identify the preferred remediation options selected from those discussed and provide a clear and comprehensive assessment and justification for their being preferred;

(e) Identify any specific investigations to be undertaken as a preliminary step to completing the remediation;

(f) Include a sampling and analysis program which will be undertaken to assess whether the remediation requirements specified in paragraph 1 above are being complied with and an appropriate ongoing environmental monitoring strategy to ensure they continue to be complied with;

(g) Specify the field and laboratory quality assurance and quality control procedures to be implemented in relation to any sampling and chemical analysis or monitoring undertaken as part of the preferred remediation options;

(h) Include plans, supported by technical justification and specifications, for the treatment and lawful disposal of any contaminated materials;

(i) Identify contamination control options to be utilised during building demolition works;

(j) Describe the contingency arrangements if the preferred remediation strategies fail to achieve the requirements specified in paragraph 1 above;

(k) Include an outline of a site management plan to be implemented during the remediation;

(l) Include a detailed timeline for completing each element of the preferred remediation options;

(m) Discuss the options for maintaining the existing community based Lead Abatement Strategy or implementing an alternative strategy to manage contamination in residential areas of Boolaroo, Speers Point and Argenton (noting that the current strategy is a requirement of conditions 42 to 44 of the development consent issued on 24 November 1995 by the Minister for Urban Affairs and Planning for upgrading of the smelter);

(n) Include a communication strategy (which must have been developed or reviewed by an independent consultant experienced in planning and implementation of public information strategies relating to environmental and public health matters) to ensure that relevant parties (including residents and businesses in the residential areas, Lake Macquarie City Council, the Department of Infrastructure, Planning and Natural Resources, NSW Health

and the EPA) are kept informed of the planning for and process of implementing the RAP.

Auditing of RAP

11. The Company must engage a site auditor accredited under the Act to review (in accordance with Part 4 of the Act) the suitability and appropriateness of the RAP to meet the requirements of this Order.

Submit draft and final RAP to EPA

12. Within 3 months of the date of this Order **(1 October 2003)** the Company must submit to the EPA's Director Contaminated Sites a draft RAP consistent with the requirements of paragraph 10.

13. Within 6 months of the date of this Order **(1 January 2004)** the Company must submit to the EPA's Director Contaminated Sites:
    (a) the RAP for EPA approval; and
    (b) the site audit report and a site audit statement on the suitability of the RAP.

Compliance with guidelines

14. All reports, works and monitoring relating to the RAP (including the site audit statement and summary site audit report) must be consistent with guidelines made or approved by the EPA under s.105 of the Act.

Implementation of works in the RAP

15. No later than 6 months after being notified in writing of the EPA's approval of the preferred remediation options as specified in the RAP the Company must:
    (a) apply for any necessary development consent to implement those options; and
    (b) commence implementation of the communication strategy included in the RAP.

Note: If the EPA does not approve the preferred remediation options, or the communication strategy, it may issue a further remediation order.

16. The Company must:
    (a) commence implementation of the preferred remediation options approved by the EPA under paragraph 15, as modified by any development consent, no later than two weeks after being granted any necessary development consent;
    (c) provide the EPA with a copy of any development consent granted for implementation of the preferred remediation options on being requested to do so by the EPA;
    (d) complete implementation of the RAP, as approved by the EPA; and
    (e) within 60 days after completion of the RAP, submit a site audit report and site audit statement by a site auditor accredited under the Act on implementation of the RAP, site validation and remediation outcomes.

Names of consultants and auditor to be provided to EPA

17. The Company must, by **29 July 2003** provide to the EPA's Director Contaminated Sites in writing:
    (a) the name(s) of each consultant engaged to prepare the inventory, the RAP and the communication strategy; and
    (b) the name of the auditor engaged to review the RAP.

Change of ownership or occupancy

18. The Company must give the EPA at least 60 days' prior written notice of any change to the ownership or occupancy of the *premises*.

CAROLYN STRANGE
Director Contaminated Sites
Environment Protection Authority
(by Delegation)

Dated: 1 July 2003

cc. Pasminco Cockle Creek Smelter Pty Limited [under Deed of Company Arrangement] (ACN 004 368 674) GPO Box 1291K Melbourne 3001
Ferrier Hodgson PO Box 290 Collins St West, Melbourne Vic 8007

NOTE:

Relationship to other regulatory instruments
This Order does not affect the requirement to comply with the provisions of any applicable environmental planning instruments, pollution reduction programs or the provisions of any other environmental protection legislation administered by the EPA.

Failure to comply with this Order
It is an offence to fail to comply with a remediation order. Heavy penalties may be imposed if you are convicted of this offence by the Land and Environment Court.

Information recorded by the EPA
Section 58 of the Contaminated Land Management Act 1997 requires the EPA to maintain a public record. A copy of this remediation order will be included in the public record.

Information recorded by councils
Section 59 of the Act requires the EPA to notify the relevant local council as soon as practicable after an order is made. The council is then required to note on its planning certificate issued pursuant to s.149(2) of the Environmental Planning and Assessment Act that the land is currently subject to a remediation order. The EPA is required to notify council as soon as practicable when the order is no longer in force and the notation on the s.149(2) certificate can be removed.

GUIDELINES MADE OR APPROVED BY THE EPA UNDER SECTION 105 OF THE CONTAMINATED LAND MANAGEMENT ACT 1997

Current as at the issue of this order

Guidelines made by the EPA

Contaminated Sites. Guidelines for Assessing Service Station Sites, December 94.

Contaminated Sites. Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land, January 95.

Contaminated Sites. Sampling Design Guidelines, September 95.

Contaminated Sites. Guidelines for Assessing Banana Plantation Sites, October 97.

Contaminated Sites. Guidelines for Consultants Reporting on Contaminated Sites, November 97.

Contaminated Sites. Guidelines for NSW Site Auditor Scheme, June 98.

Contaminated Sites. Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report, April 99.

Guidelines approved by the EPA

Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, published by ANZECC and the National Health and Medical Research Council (NHMRC), January 1992.

Australian Water Quality Guidelines for Fresh and Marine Waters. ANZECC, November 1992, which are only approved for the purposes of contaminated site assessment, investigation, remediation and site auditing under the Contaminated Land Management Act (or other relevant legislation) commenced before September 2001.

Australian and New Zealand Guidelines for Fresh and Marine Water Quality. ANZECC and ARMCANZ, October 2000.

NATIONAL ENVIRONMENTAL HEALTH FORUM MONOGRAPHS

Composite Sampling, by Lock, W. H., National Environmental Health Forum Monographs, Soil Series No.3, 1996, SA Health Commission, Adelaide.

NATIONAL ENVIRONMENT PROTECTION COUNCIL PUBLICATIONS

National Environment Protection (Assessment of Site Contamination) Measure 1999

The Measure includes a policy framework for the assessment of site contamination, Schedule A and Schedule B.

(I) SCHEDULE A

Recommended General Process for the Assessment of Site Contamination.

(II) SCHEDULE B -GUIDELINES

(1) *Guideline on Investigation Levels for Soil and Groundwater*

(2) *Guideline on Data Collection, Sample Design and Reporting*

(3) *Guideline on Laboratory Analysis of Potentially Contaminated Soils*

(4) *Guideline on Health Risk Assessment Methodology*

(5) *Guideline on Ecological Risk Assessment*

(6) *Guideline on Risk Based Assessment of Groundwater Contamination*

(7A) *Guideline on Health Based Investigation Levels*

(7B) *Guideline on Exposure Scenarios and Exposure Settings*

(8) *Guideline on Community Consultation and Risk Communication*

(9) *Guideline on Protection of Health and the Environment During the Assessment of Site Contamination*

(10) *Guideline on Competencies and Acceptance of Environmental Auditors and Related Professionals*

OTHER DOCUMENTS

Guidelines for the Assessment and Cleanup of Cattle Tick Dip Sites for Residential Purposes, NSW Agriculture and CMPS&F Environmental, February 1996.

Guidelines for Drinking Water Quality in Australia. NHMRC & Australian Water Resources Council, 1996.