

# **INDEPENDENT ASSESSMENT OF PERFORMANCE OF EPA WITH RESPECT TO ORICA ACTIVITY ON BOTANY INDUSTRIAL PARK**

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## **Executive Summary**

This study reports on the handling by the New South Wales Environmental Protection Authority of the legacy environmental problems caused by the operation of former mercury-based chlor-alkali plant on the Botany Industrial Park which ceased operations in 2002. During the plant's lifetime mercury and mercury-containing sludges were spilled onto the floor of the plant and found their way into groundwater beneath the plant and contaminated soil on the site, and by transport in surface water during heavy rain events, contaminated the sediments in Springvale drain to the west. The plant was demolished in 2004-07 and the site declared contaminated land. The present owner, Orica has been interacting with the EPA over remediation since. Nearby residents are concerned about the potential for mercury pollution of their properties. In 2007-08 Orica commissioned a Human Health and Environmental Risk Assessment (HHERA) and utilised a pre-existing Community Liaison Committee for residents to offer comment on proposed remediation plans which were considered by the EPA. Following unsatisfactory operation of the soil washing process that was trialled under a Voluntary Management Proposal (VMP), the EPA cancelled the VMP and issued a Management Order that required a second HHERA (2013) to be completed and new Remediation Action Plans (RAPs) developed and be subject to community input and expert comment. These RAPs involved the choice of new remediation technology.

In assessing the HHERAs and the planned remediation technologies the community representatives approached the National Toxics Network and were directed to Mr Andrew Helps who subsequently provided pro bono advice and conducted a spirited correspondence with officers in the EPA, the Minister's office and the media on aspects of the plans. Mr Helps is the Managing Director of Hg Technologies Pty Ltd, a Victorian company established in 2010 to recover and sell mercury from mine waste dumps associated with artisanic gold mining in northern Victoria. Mr Helps was highly critical of the HHERAs and of the contaminated soil entombing proposal of Orica and claimed that the experts had not properly accounted for elemental mercury off-gassing from soil on the whole of the Orica site. He is also of the view that there is no safe threshold limit for mercury contamination in residential areas, citing the precautionary principle. This approach runs counter to the protocols enshrined in the National Environmental Protection Measures which the EPA must work to. Unfortunately the NEPM does not give a maximum safe value for mercury in soil where some of the mercury is in elemental form and requires a site specific risk assessment

leading to a HHERA. The consultants in the HHERAs addressed this problem by calculating a maximum daily uptake for chronic exposure and showed that the site boundary emissions on the Orica site would lie well below what was considered to be safe for long-term (chronic) exposure. Subsequent measurement by instruments at the Orica site boundaries have confirmed this with all measurements lying below the  $0.1 \mu\text{g}/\text{m}^3$  for mercury vapour in air. The consultants demonstrated that residents were not impacted by mercury contaminated groundwater. Mr Helps also raised questions about the mercury content of soils in residential areas and suggested that Hg Recoveries be given a contract for extensive soil screening. He subsequently took samples in areas outside the Orica site and analysed these using X-ray fluorescence (XRF). They showed generally very low levels of mercury but some metal contamination. There was also a suggestion of HCB contamination in one location, but this was later proved to be incorrect. EPA arranged for the NATA laboratory of the Office of Environment and Heritage to take samples in Denison Street and other locations. Handling of these samples by the laboratory was unfortunate with three revisions of the results being released. Community residents were confused and distrustful and media attention ensued. In the event the results were shown to confirm that mercury and HCB contamination were significantly below toxic limits but that several of the concentrations for PCBs and other metals lay close to or slightly above those for Health Investigation Levels (HILs) for Recreational C land. The high readings were for samples taken on a Sydney Water easement and the results have been referred back to Sydney Water as the site owner. PCBs were not produced on the Orica site and it would be difficult to relate either the PCBs or the metals to that source. They probably reflect an earlier history of the Botany area as waste land used for dumping purposes. Resolution of the PCB issue represents a residual task that should be given consideration by the Independent Committee reviewing mercury contamination from the Orica site. The choice by EPA not to alert Botany residents to the possible presence of PCBs and metals on the Sydney Water easement until follow-up with Sydney Water occurred seems prudent as the levels were (depending on the soil classification) either close to the HIL (a conservative figure mandating further investigation) or below it. Advice from the Department of Health was taken in this regard.

Having carefully read correspondence and documents supplied to me by staff of EPA and others, and having interviewed EPA staff and others, I have come to the conclusion that the EPA has:

- Correctly considered and applied the NEPM framework, noting the 2013 revisions to the NEPM
- Fulfilled its obligations under the CLM Act in relation to criticisms made by Hg Recoveries, namely appropriately responding to information, addressing significant contamination and recording its actions
- Addressed the criticisms by Hg Recoveries of the NEPM process

I do not believe that the EPA has knowingly:

- Misrepresented data on contamination and monitoring
- Misinterpreted data on contamination and monitoring
- Not been rigorous in its review and regulation of industrial activities at the Botany site

Nor do I believe that EPA has an inappropriate relationship with Orica, noting that an open professional relationship is in the best interests of the community in resolving the problems associated with remediation of contaminated land.

However there remains a substantial community perception of a lack of effectiveness by EPA in its regulatory role with respect to pollution from the Orica Botany site. To this end a number of recommendations are made. These particularly focus on EPA's role in community forums, its methodologies for responding to community input and its ability to communicate effectively with community groups. Within the EPA itself and the organisations that service it procedures should be enacted to ensure improved processes for transmittal and analysis of information, especially where this is communicated to the community. Suggestions for change are contained within the body of the report.

## **Suggestions for improvement within EPA**

The review process has prompted a number of suggestions:

1. The need to support strongly in the culture of the organisation the requirement for adequate and effective community consultation
2. At public meetings EPA should assume a leadership role and provide well-briefed, technically competent persons with delegated responsibility to take decisions and the will to question statements made by other parties. EPA should avoid being forced to take a defensive posture and should be prepared to educate community delegates using its more detailed scientific and regulatory knowledge
3. Where an individual or organisation tends to dominate community discussions strong chairmanship should be used to ensure that all delegates have the opportunity to voice their feelings
4. One staff member should be designated to respond to persistent community questioners so that consistent responses are given and matters of import are passed through for consideration by the most appropriate officers. Inputs should be acknowledged but, where desirable, grouped for consolidated reply
5. EPA staff should be encouraged to develop strong external profiles by participating in national and professional activities and being strong contributors to the NEPM review process
6. With respect to the Review Panel set up to oversee the operation of the Orica Botany – Mercury Independent Review:
  - consideration should be given to appointing an independent chair to demonstrate the Panel's independence
  - To ensure that the community feels empowered consideration should be given to involving at least one community representative on sub-committees set up for special tasks e.g. selecting a tenderer
  - Documents for meetings should be sent out one week beforehand to allow members ample time for reading and assimilation
  - A communications policy should be developed so that the Panel can effectively communicate its deliberations and findings to the community. The possibility of using social media should be considered
7. Where EPA staff request services from partner organisations e.g. the laboratories of the Office of Environment and Health, appropriate officers from these organisations should be involved in assessing with EPA the significance of results before their public release. It is important that both parties understand the limitations of the service provided and take responsibility for it.