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21st January 2014

We have identified a number of items discussed in the document that require clarification and detail these below:

- Associate Professor Paul Ashley initially identified the antimony and arsenic Macleay contamination issue in the late 1990s. He worked on quantifying and qualifying the contamination with Dr Peter Lockwood through to 2007 when he retired from the university but currently is still associated with the research as an adjunct. Dr Peter Lockwood retired in 2010. During that time Matt Tighe completed a PhD and I worked as a postdoctoral research fellow on the issue. Since 2010 I have been principal research scientist (I am now a Senior Lecturer in Environmental Pollution at UNE) leading the research on the issue at UNE, collaborating with Dr Matt Tighe who is a Senior Lecturer in Ecosystem Modelling, and am the key point of contact for current information on the issue.
- Over the years we have worked with all catchment stakeholders, including Hillgrove Mines, EPA, Armidale Dumaresq Council and Kempsey Shire Council, to develop and carry out research that supports risk assessments and management decisions. Our projects are often developed in consultation with these stakeholders (who have all provided funding to support different projects over the years). This ensures outcomes target information and management needs as well as understanding biogeochemical and mobilisation processes. We then interpret the data and provide outcomes to the stakeholders so that unbiased scientific information is available to inform and support decisions. The work has been disseminated through individual stakeholder meetings, public and community forums. All of our work is available in peer reviewed publicly available publications.
- The contamination of Macleay river sediment by arsenic and antimony from historic operations at Hillgrove Mine is indeed significant, will remain for many years, and we need to be aware and manage for this.
- Acid sulfate soil management processes on the floodplain can mobilise the deposited arsenic and antimony, with consequent water contamination and uptake into plants. Concentrations in pasture grass sampled are however, low. A recent research project also showed arsenic and antimony concentrations in short term edible

vegetable crops are not detected or very low so that risk of exposure from eating these is also low. We now need to look at long term crops and expand the floodplain database e.g. for grazing animals, so that a preliminary exposure model that indicated some concern for exposure of certain floodplain populations can be verified with real field data.

- Water sampling to date shows that mobilisation of the arsenic and antimony into the water column is significant in Bakers Creek above the junction with the Macleay. Concentrations in the Macleay from West Kunderang and downstream are usually well below Australian drinking water guidelines unless the river is in high flow/flood.
- Accumulation of the contaminants in some plants and certain native organisms has been identified, especially in the upper catchment (this is where most biota sampling has occurred). We have not sampled native biota in the lower catchment yet. At one highly contaminated site on Bakers Creek, invertebrates that are usually sensitive to pollution were identified. We have, however, not studied the impact on populations nor any ecotoxic effects that may lower resilience. This is the subject of the recent grant submitted to Australian Research Council.
- The UNE research team had no involvement in the decision by Kempsey Shire Council to install a water treatment plant at Bellbrook. The previous water supply showed at times arsenic concentrations greater than the Australian drinking water guideline and the source of the arsenic was not established. The opinion expressed by Associate Professor Ashley was his personal viewpoint.
- The UNE research team has no involvement as to whether or how mining at Hillgrove will commence or not. We understand the mine will have to meet all current requirements in terms of environmental assessment and environment protection for extraction and processing operations.

I would be grateful if you could upload this communication to the SOMR website so that members are aware before our meeting on the 31<sup>st</sup> January. This will support the discussion and we can add further clarification. We will describe in more detail the areas and outcomes of research touched on above during the meeting.

Regards



Susan C. Wilson