

**Submission  
No 1046**

## **INQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES**

**Organisation:** Australian Organic Resources Pty Ltd

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## **Submission to consider the Heller Decontamination Process for waste streams (“the HDP”)**

### **APPLICATION 1 – BIOSOLIDS REMEDIATION**

The HDP is ideally suited for this application, as it was originally developed for that purpose. It removes heavy metals and pathogens to convert biosolids for beneficial reuse. The product is an organic fertilizer with no offensive odour, categorised T1-C1 under Environmental Protection Agency guidelines for unrestricted use (see EPA Biosolids Re-Use Chart).

### **APPLICATION 2 – CONTAMINATED SOIL REMEDIATION**

The HDP can be used to economically treat contaminated soil at any site via transportable process plants, converting commercially valueless wasteland into high value, saleable real estate suitable for agricultural, commercial, industrial, and residential development.

### **APPLICATION 3 – GENERAL ENVIRONMENTAL REMEDIATION**

The HDP can be utilised to clean river and other aquatic silts containing industrial and other contaminants. By removing pollutants that destroy wildlife, poison waterways, and render the surrounding environment unsuitable for animal and human habitation, aquatic ecosystems, and habitats can be rehabilitated as nature reserves or for commercial use.

### **APPLICATION 4 – RESOURCE RECOVERY**

Where a waste material contains valuable contaminants the HDP can provide an effective method for their recovery. The commercial viability of this application will depend on the nature and quantity of the contaminants.

### **THE INVESTMENT REQUIRED**

AOR requires the investment of \$2.5 million to undertake the construction, commissioning, operation, testing and certification of a pilot plant at a larger scale than previous pilot work. This will lead to commercialisation of

the process. It is expected that most early applications will be within Australia, with overseas use to be considered later.

There is the opportunity to have a proper commercially viable and sustainable solution for contaminated solid waste streams.

## **THE STRUCTURE**

To commercialize this technology the following steps are needed:

- Build a treatment plant to demonstrate the efficiency of extracting heavy metals and other contaminants from specific waste streams in bulk quantities. Ideally the process should be tested on a range of soils with different mineralogy and organic content.
- Optimise the decontamination section of the process for these wastes.
- Optimise the recycle section of the process for these wastes.

It will then be possible to determine capital and operating costs at the accuracy required for the decision regarding commercial plants.

## **HISTORY**

Support for beneficial reuse of biosolids has traditionally been somewhat apathetic. Partly due to public perceptions but also for real public health safety concerns, given the lack of effective processes that can reliably deal with both heavy metals and pathogens. A lack of appreciation of the value of biosolids as a fertilizer when decontaminated has also contributed to the economic benefit of the product being downplayed.

It was in order to address these concerns that the HDP was developed and validated on a semi-pilot scale. The initial focus was on heavy metal removal and immobilisation or recovery, but it became apparent that pathogens and other contaminants had little chance of surviving the process conditions.

Once demonstrated with agronomy trials and scientific validation, there will be a demand for the organic fertilizer produced from biosolids.

Furthermore, total control over the process makes it possible to produce a task-specific fertilizer.

The contamination possibilities of biosolids currently applied to land as a fertilizer is well known, and stricter regulations are on their way. Therefore, it makes sense to produce an organic fertilizer from biosolids for unrestricted application that people are willing to pay for.

Bob Heller

Managing Director

Australian Organic Resources Pty Ltd