

# ENPOINT

## Contaminated Land Solutions



### Ambient Background Concentrations (ABCs) A Must Know for Mine Closure

#### The issue

According to the National Environmental Protection Measure for the Assessment of Site Contamination (NEPM), the ambient background concentration (ABC) of a contaminant of potential concern (CoPC) in soil or groundwater is the sum of the naturally occurring background concentration and the contaminant levels that have been introduced from diffuse or non-point sources by general anthropogenic activity not attributable to industrial, commercial or agricultural activities. The NEPM “assumes that the ecosystem is adapted to the ABC for a locality and that it is only adding contaminants over and above this background concentration which has an adverse effect on the environment”. This premise is inherent in the contamination definition provided by the Western Australian Contaminated Sites Act 2003, which requires concentrations of a contaminant to be above the ABC before they can pose an unacceptable risk to human health, the environment or any environmental value.

Not knowing ABCs of CoPCs during closure planning can lead to unnecessary investigation and remediation, particularly when localised ABCs are above generic risk-based assessment levels.

#### How ABCs are used

Understanding the ABCs of a CoPC in soil or groundwater at a mine site is paramount for any compliance monitoring or site investigation program. Not understanding ABCs of CoPCs during mine closure planning can lead to unnecessary investigation, unachievable remediation targets and/or inappropriate site classifications.

ABCs of soil and groundwater within a particular environment are assumed to be protective of ecological

receptors within that environment. That is, the ecosystem is adapted to the ABC for a locality and that it is only adding contaminants over and above a background concentration that has the potential to cause an adverse effect to the receptor.

The ABC is typically used in early stages of assessment to determine if a CoPC warrants any further investigation. Where a CoPC is below the ABC then no further investigation or management would be required. An exception to this may be where a CoPC (e.g. arsenic) naturally exists in a drinking water source. In this instance groundwater restriction or treatment would be required.

#### ABCs and Mine Closure Planning

Quantifying ABCs of CoPCs and other parameters in soil and groundwater at a mine site is critical to closure planning. ABCs are implicitly and explicitly used to determine if further investigation and/or management of a mine site is required. In some instances, not understanding the ABC may lead to conclusions that a site is contaminated when it is in fact not. If this were the case then reclassification through the Contaminated Sites Act, 2003 would be an additional and unnecessary step in closure planning.

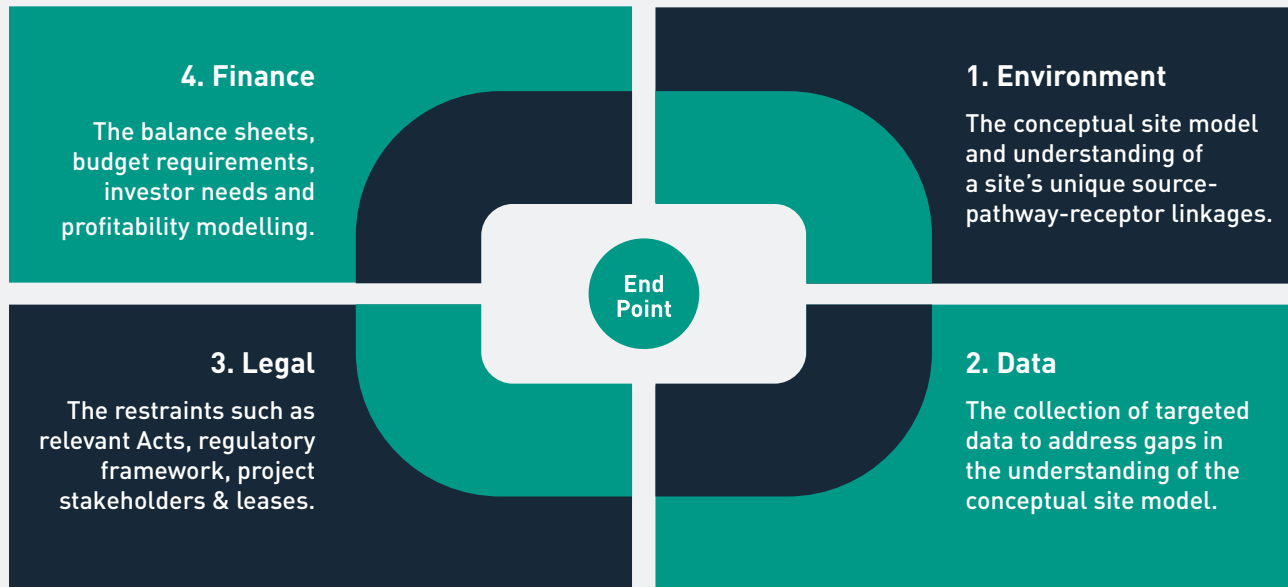
Whilst a simple concept, the derivation of ABCs of CoPCs at a site can be complicated by varying soil and groundwater types, poorly selected background sampling locations and other factors that can cause data bias and variability. There are several methods for setting ABCs for soil and groundwater recommended by the literature and international guidance. Any approach should be based on the intended use of the ABC.

## A balanced approach

Enpoint is the first choice in Western Australia for resolving contaminated land issues because they achieve a balance between cost and conservation.

They bring to life what is hidden in the environment as well as what is obscured in the scientific data,

technical jargon and financial information. They do this by presenting powerful visual modelling and rationales that lead to resolution between all stakeholders. The following is a graphic representation of the Enpoint 4-step process outlining a fine balance between these areas:



**“Enpoint saved our land development! From the beginning Enpoint was very willing to listen, understand our issues and hear our concerns. They recommended a clear approach to the end point solution that was tailored to our development and suited our project needs.”**

Chantel Gelmi – Managing Director, Marcus Corp

## The specialists in outcomes

Enpoint is an environmental consultancy highly specialised in resolving contaminated land issues.

They are differentiated by their expertise in taking clients from unknown liability to operational certainty. They do this by mediating a clear balance between the environment, data, regulations and client businesses. They deliver practical solutions for owners of contamination liability who need the liability removed and want to protect their businesses bottom line.

## We start with your challenges

Our job is to help you understand and manage:

**The Risks:** Risks caused by your contaminated land could be related to such issues as human health, habitat loss, species death, impact on reputation, land devaluation or productivity holdups depending on the situation.

**The Compliance:** Whether you are dealing with legacy issues created many years before or recently the compliance with government regulations is equally stringent and requires expert assistance to navigate through.

## Meet the consultants

The Enpoint team of environmental scientists and support staff have been in operation since 2009. Enpoint maintains an Integrated Management System (IMS), which is certified to ISO 9001:2015, ISO 14001:2015 and AS/NZS 4801:2001.



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