



Managing urban development in acid sulfate soil areas

Development in areas of high to moderate acid sulfate soil (ASS) risk must be managed appropriately to minimise disturbance and potential damage to the environment.

Disturbance of ASS should be avoided where possible—if disturbed, the management of ASS is likely to increase the cost of a project.

Site characteristics and local knowledge may indicate the presence of ASS and developers should also consult ASS risk maps, which are available at <http://der.wa.gov.au/ass>.

Planning

If you are applying to develop land within an ASS risk area, the applicable conditional approval may attract a condition requiring the investigation and management of ASS.

Further information on planning and ASS is available from the Department of Planning at <http://www.planning.wa.gov.au/publications/725.asp>.

An ASS site investigation and management plan may be required if a development includes:

- any dewatering or drainage works proposed; and/or
- the excavation of more than 100 cubic metres of soil.

Acid sulfate soil investigation

Investigating ASS sites can be a complex process requiring the assistance of a suitably experienced environmental professional.

Advice on how to engage a qualified consultant can be found in the fact sheet 'Seeking help from contaminated sites experts' at

<http://www.der.wa.gov.au/contaminatedsites>.

Your ASS investigation is a four-step process based on the Department of Environment Regulation's guideline '*Identification and investigation of ASS and acidic landscapes*', which can be found at <http://www.der.wa.gov.au/ass>.

Step 1: Desktop assessment and site inspection—identifies the likelihood of ASS in a proposed development area and pinpoints locations for soil sampling.

Step 2: Soil sampling—determines ASS presence based on site characteristics and soil lithology from bore holes or test pits.

Step 3: Laboratory analysis—confirms field screening tests and determines required neutralising rates.

Step 4: Reporting—summarises field observations, screening tests and laboratory results for assessment by DER. An ASS Management Plan (ASSMP) is required when the proposed development has the potential to disturb ASS.

Acid sulfate soil management plan

The ASSMP must address the following issues:

- potential environmental impacts—groundwater drawdown, disruption to existing bore users, vegetation stress, reduction in water quality, noise and air impacts;
- earthwork strategy—soil extraction methods, stockpile management, soil treatment/neutralisation, calculated liming rate and disposal techniques;

- dewatering strategy—procedure and control measures, treatment and disposal options, contingency measures if acidification of groundwater occurs; and
- monitoring program—soil, groundwater, vegetation, noise and air.

The ASSMP should be provided to DER for review and ASS disturbing works should not commence until DER comments are received.

Preferred ASS management strategies:

- **avoidance**—planning to avoid disturbing ASS in high to moderate risk areas.

If disturbance is unavoidable, preferred strategies are:

- **minimise disturbance**—redesign earthworks, drainage and sewer layout to avoid ASS disturbance;
- **neutralise**—add neutralising agents such as ‘aglime’ or other approved neutralising materials;
- **hydraulic separation**—pyrite can be removed by hydraulic separation followed by appropriate treatment and management;
- **strategic reburial**—certain potential ASS (PASS) can be replaced in an anoxic (devoid of oxygen) environment;
- adopt **best management practice** at all times; and/or
- **consider onsite and offsite management** of disturbed ASS and potential contaminated waters.

At the completion of works, an ASS closure report is required to be submitted to DER for review. The closure report must detail the program of works, monitoring, treatment and validation undertaken at the site.

Following DER’s review of the closure report, written advice is provided with regard to

adherence to the ASS management plan, the condition of the site following development and compliance with the ASS condition.

More information

For advice on ASS, or related matters, please contact DER Contaminated Sites on 1300 762 982.

This document is available in alternative formats and other languages on request.

Document file number:
DER2015001427
Effective July 2015

Related documents

Additional publications about ASS are available online from www.der.wa.gov.au/ass or can be requested by phoning 1300 762 982.

Legislation

This document is provided for guidance only. It should not be relied upon to address every aspect of the relevant legislation. Please refer to the State Law Publisher (SLP) for copies of the relevant legislation, available electronically from the SLP website.

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Legal advice

The information provided to you by DER in relation to this matter does not constitute legal advice. Due to the range of legal issues potentially involved in this matter, DER recommends that you obtain independent legal advice.