



ACID SULFATE SOILS FACTSHEET

WHAT ARE ACID SULFATE SOILS?

What are Acid Sulfate Soils? Acid Sulfate Soils (ASS) are soils that contain iron sulphides that are stable and do not cause a problem when waterlogged. However, when they are exposed to air, after drainage or excavation, the soils rapidly form sulphuric acid. This acid can leach into the surrounding area acidifying neighbouring drains, wetlands, creeks, estuaries and bays, causing severe environmental damage. It can affect industries such as fishing and tourism and can impact on public and private infrastructure by causing serious damage to steel and concrete structures.

WHERE DO ACID SULFATE SOILS OCCUR?

Acid sulfate soils generally occur in low-lying areas adjacent to rivers, creeks and wetlands. In the Hawkesbury area, the Acid sulfate soils Map identifies high risk areas along and in the vicinity of Hawkesbury River, Colo River, Macdonald River, Rickabys Creek, South Creek, Chain of Ponds Creek, Howes Creek, Roberts Creek, Webbs Creek, Wheeny Creek and Wrights Creek.

ASS MAPS AND HAWKESBURY LOCAL ENVIRONMENTAL PLAN 2012

The ASS maps identify 5 classes of land, with Class 1 being the highest at risk of ASS. If you require further information, please visit NSW Planning Portal or view the Maps page accompanying the Hawkesbury Local Environmental Plan 2012 (HELP 2012).

ASS MAPS AND HAWKESBURY LOCAL ENVIRONMENTAL PLAN 2012

Step 1:

Will your proposal involve the following:

a) Disturbance more than 1 tonne of soil, such as occurs in:

- Construction of artificial water bodies (including canals, dams and detention basins)
- Agriculture
- Extractive Industries
- Excavation for basement parking
- Temporary or permanent use of pumps to lower the natural groundwater level
- Construction or maintenance of drains
- Building foundations
- Flood mitigation works
- Dredging

b) Lowering of the watertable?

Step 2:

The ASS maps identify 5 classes of land, with Class 1 being the highest at risk of ASS. Please visit NSW Planning Portal or view the Maps page accompanying the Hawkesbury Local Environmental Plan 2012 (HELP 2012) to identify whether your land is likely to be affected by Acid Sulfate Soils or obtain a planning certificate under Section 10.7 of the Environmental Planning and Assessment Act 1979.

Step 3:

Check your proposal against the following table (to see if you are required to prepare an Acid Sulfate Soils management plan. If these types of works are proposed, then pursuant to Clause 6.1 Acid Sulfate Soils of HELP 2012, further investigation required

Class of Soil	Works to which this Clause applies
1	Any works
2	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.
3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.
4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.
5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.

MITIGATION STRATEGIES

If Acid Sulfate Soils are present on a site, there are several ways of avoiding or mitigating possible impacts:

- Avoid disturbing acid sulfate soils by not undertaking works where they are located
- Avoid works which are likely to lower the water table
- If the acid sulfate soils are to be disturbed, manage the acid generation potential by neutralising any acid produced (e.g. with lime), preventing acid water leaving the site; and use of acid resistant construction materials
- Avoid using acid sulfate soils for land formation – if the soils are present manage the acid generation potential before the material leaves the site from where it originates.
- Keep the acid sulfate soils below the permanent water table.

WHAT IF MY PROPOSAL REQUIRES AN ACID SULFATE SOILS MANAGEMENT PLAN?

You can either:

1. Prepare an Acid Sulfate Soils Management Plan with the help of an geotechnical engineers or consultants in accordance with the NSW Acid Sulfate Soils Manual and submit with your DA.
- Or,
2. Undertake preliminary assessment to set out in the NSW Acid Sulfate Soils Manual, to determine whether Acid Sulfate Soils are present and whether the proposed works are likely to disturb or oxidise these soils or lower the watertable. If the preliminary assessment concludes that Acid Sulfate Soils are not present or the activity would not result in a lowering of the watertable, an Acid Sulfate Soils management plan will not be required. The Acid Sulfate Soil Manual can be downloaded from the NSW Environment Protection Authority (EPA) website www.epa.nsw.gov.au/sites/default/files/acid-sulfate-manual-1998.pdf



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