

27 January 2012

GHD Pty Ltd  
Level 19, 180 Lonsdale Street  
MELBOURNE VIC 3000

Att: Reid Merriman

Dear Mr Merriman,

ELFIELD MEADOWS ESTATE  
DRAFT ENVIRONMENT MANAGEMENT PLAN

Thank you for submitting the Draft Environmental Management Plan (received 24 January 2012) for the above mentioned site and for meeting with me on 25 January 2012.

The key outcomes of the meeting were as follows:

1. Any material that is used to backfill excavations needs to be certified as clean fill. If fully imported, documentation should be provided. Material that has been sourced on site and potentially has Coode Island Silt should be treated with lime.
2. In Section 4.2 (page 14) it states that the mound "...will also provide a hydraulic barrier..." As the material contained within the mound will be potential and actual acid sulphate soil, this material must be kept dry and above the water table at all times. Further, Kayes Drain to the west may pose a flood risk and further investigation of the areas subject to inundation to the north and south of the site, is required, to determine the flood frequency this information is based on.
3. A lime layer should be placed at the base of the mound to ensure protection of the natural soil and as a "last line of defence."
4. The design of the mound is generally acceptable to EPA however, after development of the site and your client moves on, EPA has assumed that no further inspections of the mound will occur (as a worst case scenario). Based on this assumption, we concluded the following;
  - o the 1:2 slope for the batters of the mound was too steep and may pose an erosion risk. The slope needs to be shallower (1:5-1:20) or a method of stabilising the batter in the long term presented to EPA for approval;
  - o that GHD should place an appropriate amount of top soil on the batter and establish a suitable vegetation cover. The amount of top soil will be dependent of the vegetation choice however, the vegetation should be shallow rooted so as to not breach the clay cap, should be indigenous to the area and must not be a noxious weed;



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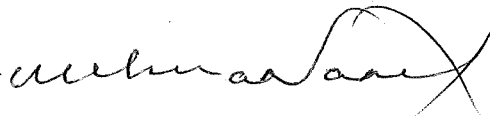


- Inspections of the cap should be frequent (perhaps monthly) in the initial stages to ensure that the vegetation has established. Following this, inspections should be 6 monthly (to encompass seasonality) for at least 3 years;
- A method of flagging the presence of Coode Island Silt on the premises and the EMP needs to be negotiated. It is EPA's recommendation that a section 173 agreement be entered into by your client and the relevant council. EPA does not believe it would be beneficial to place a statutory notice on the site as it may inhibit the development of the remaining area. If another method of alerting potential land owners is not found, EPA will put a notice on the premises to ensure it remains on the Priority Sites Register.
- Please provide EPA with copies of the post construction inspection reports.

The Environment Management Plan will be assessed by the Statutory Facilitation Unit within EPA Victoria and they will make a recommendation to the CEO. Following this, you will be required to implement the EMP. An EPA officer may inspect the works to ensure compliance with the EMP.

If you have any further queries, please do not hesitate to contact me on 9695 2875.

Yours Sincerely,



MELISSA NORTH  
PROJECT MANAGER  
ENVIRONMENTAL PERFORMANCE  
EPA VICTORIA

EPA Comments on Draft Environmental Management Plan

EPA Comments	GHD Response
<p>1 Any material that is used to backfill excavations need to be certified as clean fill. If fully imported, documentation should be provided. Material that has been sourced on site and potentially has Coode Island Silt should be treated with lime.</p>	<p>The EPA IWRG are not applicable here. The material that is being used to backfill the excavation at location TP096 will be sourced from the nearby stockpile that results indicated is not an acid sulfate soil. We are not importing any material from offsite.</p>
<p>2 In Section 4.2 (page 14) it states the the mound "...will also provide a hydralulic barrier..." As the material contained within the mound will be potential and actual acid sulfate soil, this material must be kept dry and above the water table at all times. Further, Kayes Drain to the west may pose a flood risk and further investigation of the areas subject to inundation to the north and south of the site, is required, to determine the flood frequency this information is based on.</p>	<p>The material will be placed along the western and southern boundaries of the Slough Road site. The material will be above ground and above the water table. According to the Hobsons Bay - Land Subject to Inundation Map, the alignment of the mound is not within these highlighted areas. These maps are based on a 1 in 100 year rain event and as such, the mound is not considered to be at risk of flooding.</p>
<p>3 A lime layer should be placed at the base of the mound to ensure protection of the natural soil and as a "last line of defence".</p>	<p>Noted - The draft management plan details a lime layer through the 'middle' of the mound. This will be redesigned as a base layer of lime. The final design will have a lime cap and a lime base.</p>
<p>4 The design of the mound is generally acceptable to EPA however, after development of the site and you client moves on, EPA has assumed that no further inspections of the mound will occur (as a worst case scenario). Based on this assumption, we concluded the following;</p>	
<p>- the 1:2 slope for the batters of the mound was too steep and may pose an erosion risk. The slope needs to be shallower (1:5 - 1:20) or a method of stabilising the batter in the long term presented to EPA for approval;</p>	<p>We have consulted our geotechnical engineers who have advised that a 1:3 slope gradient is acceptable from a slope stability of view, as well as for vegetation growth and erosion control. As such, our redesigned mound will have 1:3 slopes as is widely applied.</p> <p>We have also reassessed the quantity of material that will be put into the mound and it is approximately 65,000 m<sup>3</sup> (considering approximately 35,000 m<sup>3</sup> will remain underground at the Aberdeen site). The original mound design was produced with 100,000 m<sup>3</sup> in mind. The height can now be brought down to 3.5 m (from an original height of 5.0 m), with a width of 31.5 m. See below for revised mound design.</p>

**Elfield Meadows**

2/03/2012

**EPA Comments on Draft Environmental Management Plan**

EPA Comments	GHD Response
<ul style="list-style-type: none"><li>- that GHD should place an appropriate amount of top soil on the batter and establish a suitable vegetation cover. The amount of top soil will be dependent of the vegetation choice however, the vegetation should be shallow rooted so as to not breach the clay cap, should be indigenous to the area and must not be a noxious weed;</li></ul>	<p>The surface of the mound will initially be capped with either clay or a geomembrane capping material. On top of this, approximately 200 mm of topsoil will be layed using a hydromaulch seeding system. This will decrease the chances of any wind or rain erosion occurring prior to the establishment of indigenous vegetation. This should be sufficient to allow adequate space for grass roots to develop. Seeing as the slopes will be a gradient of 1:3, it is not expected that erosion of this topsoil will occur.</p>
<ul style="list-style-type: none"><li>- Inspection of the cap should be frequent (perhaps monthly) in the initial stages to ensure that the vegetation has established. Following this, inspections should be 6 monthly (to encompass seasonality) for at least 3 years;</li></ul>	<p>Noted. This will be changed in the final document.</p>
<ul style="list-style-type: none"><li>- A method of flagging the presence of Coode Island Silt on the premised and the EMP needs to be negotiated. It is EPA's recommendation that a section 173 agreement be entered into by your client and the relevant council. EPA does not believe it would be beneficial to place a statutory notice on the site as it may inhibit the development of the remaining area. If another method of alerting potential land owners is not found, EPA will put a notice on the premises to ensure it remains on the Priority Sites Register.</li></ul>	<p>Our client is happy to enter into a section 173 agreement.</p>

**Elfield Meadows**  
**EPA Comments on Draft Environmental Management Plan**

2/03/2012

EPA Comments	GHD Response
- Please provide EPA with copies of the post construction inspection reports.	Will do.

