

## James Neave

---

**From:** Oliver Benson <[REDACTED]>  
**Sent:** 13 February 2020 11:22  
**To:** James Neave  
**Subject:** RE: Evergreen Farm - WSCC/004/20 - FYI - Matters to be addressed please - JN to EHO and EA

Hi James,

I have now had the opportunity to assess the application. I note that three reports have been submitted with relation to the contamination onsite. These are:

- A desktop study prepared by Ged Duckworth Limited, dated May 2018
- A ground Investigation report, by Geo-Environmental Services Limited, reference GE17326/GIR/SEPT18, dated September 2018
- A Geotechnical Design Report for Landfill Cap, by The Environmental Protection Group, reference EPG/AMV/EGF/2019/GDR/V3, dated February 2019

The desktop study and ground investigation report were previously assessed and therefore my comments in relation these remain principally the same.

The desktop study developed a conceptual site model based on the history of the site and site walkover and suggests that “the site currently has the potential for a high risk to human health from landfill gas and groundwater leachate emissions to controlled waters”.

Due to finding of the Ged Duckworth Limited report, Geo-Environmental were contracted to undertake a preliminary ground investigation. Section 4.1 of the report states that “the intrusive investigation works did not encounter conditions that warranted a revision of the preliminary Conceptual Site Model”. I would note section 4.1 also refers to a section 2.7, that does not appear to exist within the report. The rest of section 4 then does appear to go on to risk assess the impact of the intrusive findings at the time.

The Geo-Environmental report analysis supports the assessment that the contaminants within the waste mass on the site are mobile, leaching, and impacting controlled waters, as such It is considered that remediation measures are required. It suggests that after capping has be undertaken, that the site be re-investigated to ensure controlled waters are no longer impacted.

In terms of ground gas, methane was recorded on site in the range of 0.0% – 53.0% v/v, whilst carbon dioxide was present in the range 0.0% – 11.1% v/v. However, the report indicates that the finding at the time suggested that ground gases are not currently migrating off the site at concentrations which could pose a risk to adjacent land uses which comprise a mix of open space, residential housing, road network. The current risk to human health does not appear to have been updated based on this however, and that may be because the report goes onto suggests that further ground gas monitoring should be undertaken on the site prior to remediation in order that the site can be fully characterised.

Ultimately the site contains contaminates and we would want to encourage and support the voluntary remediation that is proposed.

I would note that the Environmental Protection Group report makes reference to there being an updated and completed ground Investigation report by Geo-Environmental Services Limited, dated January 2019. However, this does not appear to be present and a condition will need to be attached requiring that evidence be submitted to show the report has been adequality analysed.

As I do not have access to the completed ground investigation report it is not possible to be certain that the presented remediation design is acceptable. However, based on the information subtitled to date the overall design does appear satisfactory for remediating the site. I would however caveat that I do not have the knowledge or expertise to comment on the detailed design of the venting system specified or the geotechnical information relating to cohesion and stability analysis.

Given the venting may need permitting for emission to air, the EA may have further comment as to the acceptability of the specific design of the venting system. Alternatively, you may wish to seek to seek further advise.

In terms of the stability analyses for the proposed remediation work, the report outlines the risk of deep-seated failures occurring is acceptable, but as above this is not an area I have experience in and you may wish to seek to seek further advise.

The Environmental Protection Group report also outlines the risks of the capping creating preferential pathways for gas going off site. It is for this reason that they have recommended that continues gas monitoring be put in place two months prior to works starting, and to remain in place while the capping work is undertaken. This is to establish a baseline for the continues gas monitoring, and to then monitor if any migration of gas off site may be occurring due to the installation of the capping. If this occurs, then works will have to stop while a the remediation plan is reconsidered. This may delay and increase the time of works.

I have been previously asked if all the work to remediate the site strictly necessary. This is very difficult question as it is preferred to go beyond the bare minimum in terms of breaking potential linkages from contamination sources to receptors. That said, part of the reason for a minimum of two meters of soil above the clay cap is to allow room for tree roots. If it was stipulated that trees or plants with deep roots could not be planted on the remediated area, then it may be possible to reduce the level of soil being brought to site.

Based on the reports, I would suggest the following conditions are attached to the application in order to ensure the site is fully investigated before remediation is put in place, and to ensure that all works are verified afterwards to ensure all pathways to receptors have been severed:

1) Prior to the commencement of development approved by this planning permission (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), the following components of a scheme to deal with the risks associated with contamination of the site, including the identification and removal of asbestos containing materials, shall each be submitted to and approved, in writing, by the local planning authority:

a) A site investigation scheme, to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site;

and, unless otherwise agreed in writing by the LPA,

b) Based on the site investigation results and the detailed risk assessment an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

2) The development hereby permitted shall not be occupied/brought into use until there has been submitted to and approved in writing by the Local Planning Authority a verification plan by a competent person showing that the remediation scheme required and approved has been implemented fully and in accordance with the approved details (unless varied with the written agreement of the LPA in advance of implementation). Any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action shall be identified within the report, and thereafter maintained.

Reason (common to all): To ensure that the risks from land contamination to the future users of the land are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

In addition, the following precautionary condition should be applied separately:

3) If during construction, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing by the LPA), shall be carried out until a method statement identifying, assessing the risk and proposing remediation measures, together with a programme, shall be submitted to and approved in writing by the LPA. The remediation measures shall be carried out as approved and in accordance with the approved programme. If no unexpected contamination is encountered during development works, on completion of works and prior to occupation a letter confirming this should be submitted to the LPA. If unexpected contamination is encountered during development works, on completion of works and prior to occupation, the agreed information, results of investigation and details of any remediation undertaken will be produced to the satisfaction of and approved in writing by the LPA.

Please don't hesitate to give me a call if you wish to discuss the site further.

Kind regards,

Oliver

Oliver Benson BSc (Hons), MCIEH  
Contaminated Land and Environmental Protection Officer  
Environmental Health  
Room 3, The West Wing  
Mid Sussex District Council  
Oaklands Road  
Haywards Heath  
RH16 1SS

