

Dewsbury & District Hospital

**Response to Comments Raised by
Kirklees Environmental Health
(October 2023)**

Prepared for Darwin Group Ltd

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1 Introduction

Key GeoSolutions Ltd (KGS) has been commissioned by Darwin Group to respond to comments made by Kirklees Environmental Health on the KGS Combined Phase 1 Desk Study & Phase 2 Report on Ground Investigation (9202-001-R-01-1) which was submitted as part of the planning permission application in relation to the development of a new hospital building at Dewsbury and District Hospital in West Yorkshire.

2 Kirklees Environmental Health Comments

Kirklees Environmental Health had no objection to the proposed development subject to “the necessary contaminated land conditions and footnote being applied to any permission granted”. There were several points relating to the findings of the KGS report (9202-001-R-01-1) which Environmental Health requiring clarification on; these are listed below.

1. Given the identified potential risks from ground gases we expect to see the results of the ground gas monitoring that is referred to in the report.
2. The sampling methodology is unclear and requires justification. For instance, five out of six samples were from the clay layer however one of the potential risks identified was from made ground. Therefore, it is unclear how the report conclusions have been reached.
3. Concerning the diesel generator the report reads, ‘Although no evidence of diesel leakages around the generator or in the ground encountered during the investigation and testing, there is still potential for contamination to be present locally around the generator.’ It is unclear how this statement can be made when none of the sampling locations appear to be in the vicinity of the generator.
4. No groundwater monitoring and sampling has taken place. Clarification is necessary.
5. The First Brown Metal coal seam is believed to be present below the site at shallow depth, however the location is unconfirmed. The risk of combustible materials does not appear to be considered. Clarification is necessary.

3 KGS Response to Comments

The following section collates KGS' responses to the comments made by Kirklees Environmental Health, summarised in Section 2 above.

3.1 Point 1 - Ground Gases

3.1.1 Kirklees Environmental Health Comment

"Given the identified potential risks from ground gases we expect to see the results of the ground gas monitoring that is referred to in the report."

3.1.2 KGS Response

The results of the ground gas monitoring are documented as part of the KGS report 9202-002-R-01-0 dated August 2023.

The KGS report (9202-002-R-01-0) concluded the following:

"Based on the gas monitoring results, the location of the proposed building at Dewsbury & District Hospital is characterised as CS2.

The proposed building should be designed with appropriate gas protection measures.

It was also noted that some addresses at this location are in bands of elevated radon potential and the maximum radon potential is 5-10%. The UK Radon Government website recommends that for sites in the 5-10% risk band that basic radon protective measures are implemented."

3.2 Point 2 - Sampling Methodology

3.2.1 Kirklees Environmental Health Comment

"The sampling methodology is unclear and requires justification. For instance, five out of six samples were from the clay layer however one of the potential risks identified was from made ground. Therefore, it is unclear how the report conclusions have been reached."

3.2.2 KGS Response

The Made Ground across the Site is quite shallow. Made Ground below any soft landscaped areas should be removed to a depth of 600mm below the proposed formation levels and replaced with clean fill (as recommended on page 48 of KGS report 9202-001-R-01-1).

3.3 Point 3 - Diesel Generator

3.3.1 Kirklees Environmental Health Comment

“Concerning the diesel generator the report reads, ‘Although no evidence of diesel leakages around the generator or in the ground encountered during the investigation and testing, there is still potential for contamination to be present locally around the generator.’ It is unclear how this statement can be made when none of the sampling locations appear to be in the vicinity of the generator.”.

3.3.2 KGS Response

The diesel generator is a relatively new piece of equipment that was installed on the Site after 2019. Although it could be a potential source of contamination, hence the inclusion in the report, as stated in KGS report 9202-001-R-01-1, there is no evidence to suggest fuel is leaking. Without evidence of a fuel leak, we would not propose to start excavating trial pits below newly installed equipment.

3.4 Point 4 - Groundwater Monitoring

3.4.1 Kirklees Environmental Health Comment

“No groundwater monitoring and sampling has taken place. Clarification is necessary.”.

3.4.2 KGS Response

As the Site is underlain by low permeability strata and there are no Controlled Waters directly below the Site, sampling and testing of groundwater is not considered to be necessary.

Groundwater levels were recorded during the gas monitoring visits, see the KGS Gas Monitoring Summary report 9202-002-R-01-0 for details.

3.5 Point 5 - First Brown Metal Coal Seam

3.5.1 Kirklees Environmental Health Comment

“The First Brown Metal coal seam is believed to be present below the site at shallow depth, however the location is unconfirmed. The risk of combustible materials does not appear to be considered. Clarification is necessary.”.

3.5.2 KGS Response

An additional ground investigation was undertaken at the Site between 2nd October and 4th October 2023, this investigation was undertaken specifically to search for the First Brown Metal coal seam.

As part of this ground investigation, seven boreholes were drilled to 10m depth; one was cored, the others were open-holed. None of the boreholes encountered any coal. One of the boreholes (RH06) had a loss of flush below the casing, the driller reported the ground was very soft, but the drilling rate did not "jolt"

as would be expected when a void was encountered; another borehole (RH07) was drilled next to RH06 which did not have a loss of flush.

Gas monitoring conducted during the drilling did not pick up any elevated levels of ground gases, or lowered levels of oxygen.

It was therefore concluded that the First Brown Metal coal seam is either deeper than 10m below the Site or does not exist below the Site. Therefore, the potential risks associated with the coal seam (ground gases, settlement due to old workings and presence of combustible materials) can be discounted and no-longer need to be considered or mitigated against as part of the development.

The KGS report 9202-001-R-01 has been updated to revision 2 (9202-001-R-01-2) to include the results of this additional ground investigation.