

Tuesday, 11 October 2016

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Dear Sir,

**Re: Summary of In-Ground Contamination – Ivanhoe Estate, Cnr Herring and Epping Roads, Macquarie Park NSW 2113.**

DLA Environmental Services (DLA) was requested by Mr. Richard McLachlan of Frasers Property Australia to provide an appraisal of in-ground contamination at the property identified as:

**IVANHOE ESTATE**

Corner of Herring and Epping Roads,  
Macquarie Park NSW 2113 (the site)

The purpose of this letter is to identify issues and provide a summary of in-ground conditions with regard to potential contamination. It is understood that the Department of Housing will be carrying out demolition of the 259 existing dwellings at the site and that Frasers Property Australia will be responsible for all in-ground contamination, if found, upon acquisition of the site.

The site identification details are outlined in **Table 1** below:

**Table 1 – Site Identification Summary**

ITEMS	DETAILS
<b>Site Name</b>	IVANHOE ESTATE
<b>Address</b>	Cnr Herring and Epping Roads, Macquarie Park NSW 2113
<b>Local Government Authority</b>	City of Ryde
<b>Lot and Deposited Plan</b>	Lots 6-20 in DP 861433 Lot 5 in DO740753
<b>Current Use</b>	Residential (Department of Housing)
<b>Site Area (approx.)</b>	8 hectares
<b>Locality Map</b>	Refer to <b>Figure 1</b> – Site Location

### IN-GROUND CONDITIONS

A comprehensive environmental assessment was undertaken at the site by JBS&G in the report titled:

- *Detailed Site Investigation – Ivanhoe Estate, Herring Road, Macquarie Park NSW*, prepared by JBS&G, dated 30 September 2016 (report reference: 52047/104956 (Rev A)).

The DSI comprised a review of previous investigations, historical information and intrusive sampling. Soil sampling was completed at 26 grid-based and targeted locations (depths ranging from 0.15 to 0.6m below ground surface (bgs)). DLA note that the sampling regime adopted in the DSI is less than the minimum sampling density specified in the *Sampling Design Guidelines* (NSW EPA, 1995), for the characterisation of the Site. The number of sampling locations is however considered adequate for environmental assessment purposes for the following reasons:

1. There is limited evidence of historical contaminating activities at the site based on the previous desktop investigation and the DSI;
2. Sampling was completed at 26 grid-based locations with selected sample locations skewed to target identified areas of environmental concern; and,
3. Samples were collected from surface (0.0-0.1m bgs), subsurface (0.2-0.3m bgs) and deeper (0.4-0.5m bgs) layers, thereby providing adequate spread across soil profiles and the expected depths of potential impact.

All contaminants of potential concern were reported at levels less than the Assessment Criteria, with the exception of benzo(a)pyrene which exceeded the adopted ecological criteria at one sample location. This ecological exceedance was not considered to present an unacceptable ecological risk

due to its limited effects on plant uptake. DLA agree with this proposition. No asbestos was detected in any of the samples submitted for analysis. On this basis, contaminants in soils do not present an unacceptable risk to human health or the environment generally and do not preclude redevelopment of the site for all its intended uses.

### **ALTERED TOPOGRAPHY AREAS**

Clarification was sought with regard to the three areas labelled as 'Altered Topography' on Figure 4 of the DSI (JBS&G, 2016). In particular, the following matters have been addressed:

#### **1. Are the Altered Topography areas where historical cutting and/or filling has occurred?**

The DSI indicates that historical cut and fill activities undertaken to facilitate the construction of larger developments in the estate were apparent. The principal filling activities occurred in the following areas, which are identified as the 'Altered Topography' areas in Figure 4 of the DSI:

- Unnatural undulation in topography was observed in the south-west corner of Lot 16 in DP861433, potentially associated with cut and fill activities; and,
- Significant alteration of the ground surfaces appeared to have taken place during construction in Lots 12 and 17 in DP861433, potentially being achieved from the importation of fill materials or utilisation of building and demolition waste mixed with soils beneficially reused from the site.

Filling activities have therefore occurred across the Altered Topography areas.

#### **2. If the Altered Topography areas where subject to historical filling, are bore logs and soil analytical data available from within these areas (additional to the identified sampling locations around the periphery of these areas)?**

Boreholes implemented as part of the DSI provide coverage around the perimeter of the Altered Topography areas and are confined to locations along the roadways or bushland at the site boundary. The boreholes do not appear to specifically target central fill areas and as a result, bore logs and soil analytical data are not available for central portions of the Altered Topography areas.

The current bore logs indicate that fill along the perimeter comprises relatively homogeneous gravelly sand. The boreholes were terminated before the full extent of fill was determined and the depth of fill across the site in these areas is therefore unknown.

## CONCLUDING REMARKS

Based on a review of the available historical and investigation data, DLA consider that there is a low likelihood of unacceptable contamination to be present on the Site as a result of past and present land use activities.

A data gap does however exist for the Altered Topography areas, which were only subject to perimeter sampling as part of the DSI. No information is available describing the origin of the filled soils and whether the soils were imported from off-site. The DSI recognised the likelihood for these areas to have been filled with imported materials including building and demolition waste and a potential therefore exists for asbestos to be present amongst mixed waste.

DLA recommend that additional visual inspections and limited sampling are performed across the central portions of the Altered Topography areas. The objective of the additional investigation will be to close out any issues relating to the potential presence of asbestos in filled and/or imported soils of the Altered Topography areas. Upon satisfaction of this data gap, DLA envisage that the risk of potential contamination in-ground will be low.

The proposed additional inspection and sampling locations are shown in **Attachment 1**.

If you have any questions please do not hesitate to contact us.

Yours faithfully,

**DLA ENVIRONMENTAL SERVICES**



**Nathan Lambrinos**  
Environmental Consultant

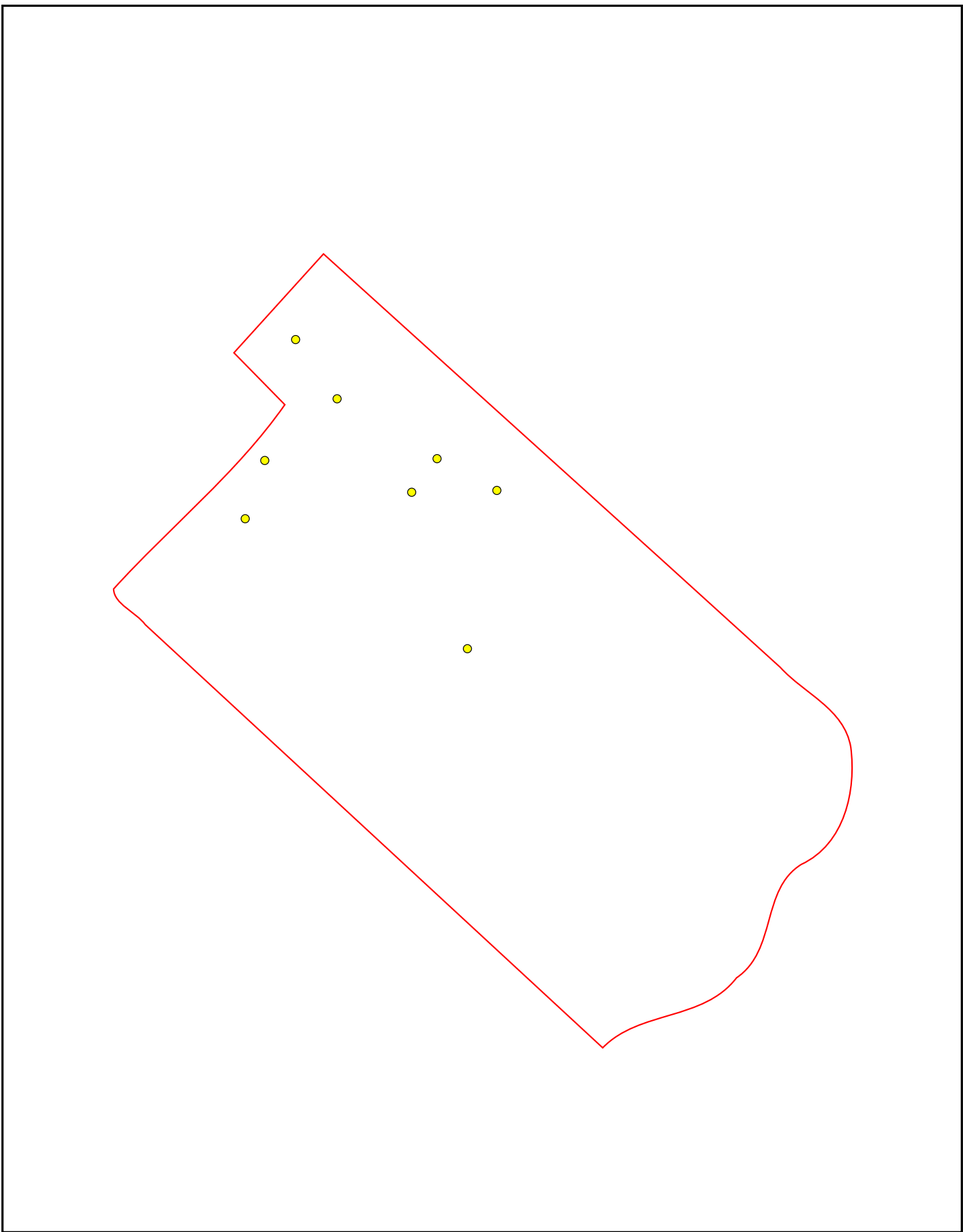


**Simon Spyrdz**  
General Manager

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**ATTACHMENT 1 – PROPOSED ADDITIONAL INVESTIGATION LOCATIONS**

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**Legend**

- Site Boundary
- Proposed Locations (approximate)
- Altered Topography Areas



Approximate Scale



Figure Title

Proposed Additional Investigation Locations

Project Title

Ivanhoe Estate, Macquarie Park

Client

Frasers Property Australia

Project No.

DL 3953

Date

11/10/2016

Scale

As Shown

Figure No.

1

Revision

Version 1.0