

TTW
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Attention: Ms Grace Carpp
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**GEOTECHNICAL ASSESSMENT
PROPOSED S4 DATA CENTRE DEVELOPMENT
16 JOHNSTON CRESCENT, HORSLEY PARK, NSW**

1 INTRODUCTION

This report has been prepared to accompany a detailed SSDA for the proposed S4 data centre development at 16 Johnston Crescent, Horsley Park (SSD-63741210).

The application seeks consent for construction and operation of a data centre development and includes site preparation works, bulk earthworks and infrastructure, and construction of the buildings, ancillary facilities, and associated site works.

Specifically, the Project comprises the redevelopment of the site as summarised below:

- Site preparation works including earthworks, excavation and retaining walls.
- Construction and operation of a data centre development comprising:
 - (5x) data centre buildings with the following maximum heights:
 - ‘Hyperscale 1 Typical Building’ = 39 metres
 - ‘Hyperscale 2 Typical Building’ = 39 metres
 - ‘Enterprise Building’ = 32 metres
- Vehicle access via Johnston Crescent.
- On-site car parking and loading within at-grade hardstand areas.

This report has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) dated 27 October 2023 issued for the SSDA (SSD-63741210). Specifically, this report has been prepared to respond to the SEARS requirement issued below.



SEAR Item	Description of Requirement	Section Reference (this Report)
Item 13 Ground and Water Conditions	<ul style="list-style-type: none"> • Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site, including soil erosion, salinity and acid sulfate soils. • Provide a Surface and Groundwater Impact Assessment that assesses potential impacts on: <ul style="list-style-type: none"> ○ Surface water resources (quality and quantity) including related infrastructure, hydrology, dependent ecosystems, drainage lines, downstream assets and watercourses ○ Groundwater resources in accordance with <i>Groundwater Guidelines</i> 	<p>Refer to Section 4.</p> <p>This letter addresses the 'Geotechnical Assessment' component of the required documentation to address this SEARs item. Reference should be made to the JK Environments report, Ref: E36628BRrpt, for details addressing the other components of this SEARs item.</p> <p>Based on groundwater level measurements made in monitoring wells, the proposed development is not expected to intersect the groundwater table and therefore no water take is expected.</p>

To assist with this assessment, we have been provided with the following documents:

- Geotechnical Factual Report prepared by Douglas Partners, Project No. 76582.18, Doc. No. R.001.Rev0 dated 16 September 2019;
- Confirmation Testing Letter prepared by Douglas Partners, Project No. 76582.26, Doc. No. R.002.Rev1 dated 26 October 2023;
- Earthworks Summary Report prepared by Douglas Partners, Project No. 76582.22, Doc. No. R.003.Rev0 dated 31 October 2023;
- Cut/Fill Plan drawing prepared by TTW, Ref: S4-CI-NXT-DRG-0000-1000, Rev 1 undated;
- Proposed Site Plan drawing prepared by HDR, Dwg. No. AR-0000-DRG-NXT-0062, Rev 1 dated 20 December 2023.

Based on the above documents, we understand that generally filling will be required over the northern portion of the site to a maximum height of about 1.5m, with the exception of the backfilling of the existing detention basin, which will require filling to a height of about 3.5m. Cut will generally occur over the southern portion of the site to a maximum depth of about 1.5m.

2 THE SITE

The site is located at 16 Johnston Crescent, Horsley Park within the Fairfield Local Government Area (LGA). The site is legally described as Lot 305 in Deposited Plan 1275011.

An aerial photograph of the site is provided at **Plate 1**. The site comprises vacant land which has been cleared of vegetation and does not contain any existing built form structures. Bulk earthworks approved under DA-893-201 are currently underway on the site.

The site will be well serviced by infrastructure. The signalised intersection of Lenore Drive and Old Wallgrove Road at Eastern Creek is approximately 2 kilometres to the north, providing access to Wallgrove Road and the Westlink M7 Motorway to the east and Erskine Park Road and Mamre Road to the west. Each of these roads provides access to the M4 Motorway to the north and M5 Motorway to the south. A utilities and site services report will accompany the EIS.

The site is located approximately 35 kilometres west of the Sydney Central Business District (CBD), 17 kilometres west of the Parramatta CBD and 10 kilometres north-east of the future Western Sydney International (WSI) airport.

The site is within a developing employment precinct, including the ESR Horsley Logistics Park, Oakdale Central, Oakdale South and Horsley Park Employment Precinct. It is also close to other established and emerging employment-generating precincts, including Eastern Creek to the north, Huntingwood to the north-east, Wetherill Park and Mamre Road West to the north-west and Wetherill Park to the east.

Plate 1 Site Aerial Photograph



Source: Nearmap (2023)



3 ASSESSMENT PROCEDURE

The following details our assessment procedure:

- Review of the provided documents, as discussed in Section 1 above.
- Three groundwater monitoring wells were installed by our environmental division, JK Environments, on 18 and 19 March 2024.
- Three existing wells were also present on site and the groundwater levels also measured during the same site visit.
- The groundwater levels were measured in the wells on 21 March 2024 by our Geotechnical Engineer. Data loggers for longer term groundwater monitoring were also installed during this visit.
- Pump-out tests were performed in the groundwater monitoring wells to assess the coefficient of permeability of the subsurface profile over the screened portion of the monitoring wells.

4 RESULTS OF ASSESSMENT

Based on our review of the provided documents, the subsurface conditions generally comprise engineered fill of thickness varying between about 0.2m and 6.2m overlying natural clays and siltstone/laminite bedrock.

The following table summarises the groundwater levels measured in the monitoring wells. The well locations and groundwater level contours are shown on the attached Figure 2.

Location	Surface Level (mAHD)	Measured Groundwater Depth on 21 March 2024 (m)	Measured Groundwater Level on 21 March 2024 (mAHD)
BH1	83.91	10.3	73.6
BH2	83.11	6.1	77.0
BH15	84.48	9.5	75.0
S3-06	84.01	5.8	78.2
S3-07	82.59	4.6	78.0
S3-08	83.68	5.2	78.5

5 COMMENTS AND RECOMMENDATIONS

Based on our assessment, the groundwater table was measured at depths between approximately 4.6m and 10.3m below existing surface levels, or between about RL73.6m and RL78.5m. Given the proposed maximum cut depth is about 1.5m, the groundwater is significantly below the proposed finished levels of the development. Therefore, the groundwater will not be intersected by the proposed development and no water take is expected.

We consider that no further geotechnical assessment with respects to groundwater is warranted and that SEARs Item 13 has been adequately addressed with respects to the geotechnical assessment requirement.



Notwithstanding this, we have installed data loggers within the monitoring wells with the intention of carrying out at least 3 months of groundwater monitoring.

Should you require any further information regarding the above, please do not hesitate to contact the undersigned.

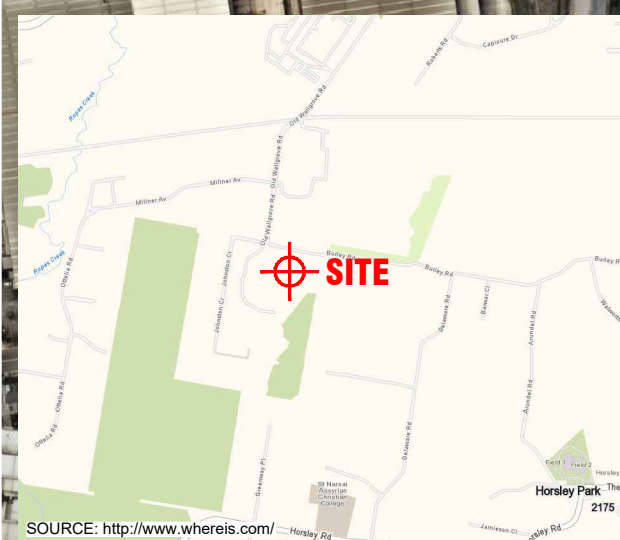
Yours faithfully
For and on behalf of
JK GEOTECHNICS

Owen Fraser
Associate | Geotechnical Engineer
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Encl. Figure 1 – Site Location Plan
Figure 2 – Groundwater Monitoring Well Location Plan



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AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

Title:	SITE LOCATION PLAN	
Location:	16 JOHNSTON CRESCENT, HORSLEY PARK, NSW	
Report No:	34951YF	Figure No: 1

This plan should be read in conjunction with the JK Geotechnics report.

JKGeotechnics



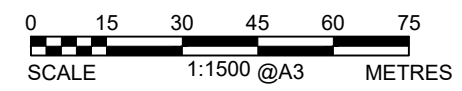
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LEGEND

- WELL INSTALLED BY JK ENVIRONMENTS
- ⊕ WELL INSTALLED PREVIOUSLY BY DOUGLAS PARTNERS
- 77.5 GROUNDWATER CONTOUR INTERVALS (m)
- INFERRED GROUNDWATER FLOW DIRECTION

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM



This plan should be read in conjunction with the JK Geotechnics report.

Title: GROUNDWATER MONITORING WELL LOCATION PLAN

Location: 16 JOHNSTON CRESCENT, HORSLEY PARK, NSW

Report No: 34951YF Figure No: 2

JKGeotechnics

