



Formus Property Pty Ltd

Dewatering Management Plan

125 & 145-175 Lawson Road, Badgerys Creek NSW


Report No:
3006-DMP-01-110825.v2f

Report Date:
5/02/2026

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DOCUMENT RECORD

Revision	Date	Author	Reviewer
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v2f	5 February 2026	Lachlan Mulhearn	Maxwell Cunningham

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Document Title:	Dewatering Management Plan – 125 & 145-175 Lawson Road, Badgerys Creek NSW
Site Address:	125 & 145-175 Lawson Road, Badgerys Creek NSW
Client Name:	Formus Property Pty Ltd
Site Size:	≈ 14.2 ha
Reference Number:	3006-DMP-01-110825.v2f
Project Type:	Dewatering Management Plan
Project Type Abbreviation:	DMP
Document Draft:	FINAL
Document Revision No.	v2

Prepared by Environmental Group Australia Pty Ltd ABN: 83 671 599 143

EXECUTIVE SUMMARY

Environmental Group Australia Pty Ltd (EGA) were engaged by Formus Property Pty Ltd (the client), to prepare a Dewatering Management Plan (DMP) to manage water across the site located within 125 & 145-175 Lawson Road, Badgerys Creek NSW (hereafter referred to as 'the site') (refer to **Figure 1**) prior to the commencement of construction works.

EGA has the following project appreciation:

- The site covers an area of approximately 14.2 ha;
- The site is proposed for future commercial and industrial redevelopment;
- The proposed development works include excavation of the site footprint down to 6 m bgl;
- A Soil and Water Management Plan was prepared for the site in 2025 by AT&L, outlining requirements for control of surface water runoff and construction of a Type A sediment basin within the site;
- An Integrated Water Cycle Management Plan was prepared for the site in June 2025 by AT&L, detailing methodologies for stormwater management during operation of the site, inclusive of
 - Stormwater quality improvement
 - Quantity reduction; and
 - Flow mitigation measure;
- A Groundwater Depth Assessment was undertaken for the site in August 2025 by EGA, which identified groundwater between 2-4 m bgl across the site footprint;
- As the proposed works are considered highly likely to interact with groundwater, a Dewatering Management Plan (DMP) is required to outline the requirements for discharge of groundwater seepage encountered during development works; and
- This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD- 81662708).

The objectives of this investigation were to:

- Provide a methodology for the assessment of potential groundwater accumulations against adopted re-use / discharge criteria; and
- Provide recommendations on dewatering procedures and any further investigation or management requirements.

The scope of works undertaken to address the investigation objectives, included:

- Review previous groundwater assessments, site information and proposed work plans; and
- Provide recommendations for further investigation and management of retained on-site stormwater accumulations.

Based on EGAs assessment of the desktop review and fieldwork data, in the context of the proposed industrial development, EGA make the following conclusion and recommendation:

- An assessment of retained groundwater on-site is to be undertaken prior to any water discharge to ensure that discharged water does not present a risk to relevant on-site and off-site receptors.

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Figure 1 - Site Layout

1 INTRODUCTION

1.1 Background

Environmental Group Australia Pty Ltd (EGA) were engaged by Formus Property Pty Ltd (the client), to prepare a Dewatering Management Plan (DMP) to manage water across the site located within 125 & 145-175 Lawson Road, Badgerys Creek NSW (hereafter referred to as ‘the site’) (refer to **Figure 1**) prior to the commencement of construction works.

EGA has the following project appreciation:

- The site covers an area of approximately 14.2 ha;
- The site is proposed for future commercial and industrial redevelopment;
- The proposed development works include excavation of the site footprint down to 6 m bgl;
- A Soil and Water Management Plan was prepared for the site in 2025 by AT&L, outlining requirements for control of surface water runoff and construction of a Type A sediment basin within the site;
- An Integrated Water Cycle Management Plan was prepared for the site in June 2025 by AT&L, detailing methodologies for stormwater management during operation of the site, inclusive of
 - Stormwater quality improvement
 - Quantity reduction; and
 - Flow mitigation measure;
- A Groundwater Depth Assessment was undertaken for the site in August 2025 by EGA, which identified groundwater between 2-4 m bgl across the site footprint;
- As the proposed works are considered highly likely to interact with groundwater, a Dewatering Management Plan (DMP) is required to outline the requirements for discharge of groundwater seepage encountered during development works; and
- This report has been prepared to address the Secretary’s Environmental Assessment Requirements (SEARs) issued for the project (SSD- 81662708).

1.2 Project Development

This report has been prepared in support of a development at 125 & 145-175 Lawson Road, Badgerys Creek (**the site**), including detailed approval for an Industrial Estate. The project seeks to deliver a new Industrial Estate comprising large and small format warehousing and distribution centres within Badgerys Creek.

Specifically, the SSDA seeks approval for the following:

- Construction of an Industrial Estate, comprising four (4) warehouse buildings with a total of 46,153.9 m² of warehouse and ancillary office GFA. It will deliver a range of large and small format warehouse and distribution centres, as follows:
- Warehouse 1 has a total GFA of 40,505.5 m²
 - Warehouse GFA: 38,572.0 m²
 - Office GFA: 1,877.5 m² (plus 60 m² dock office)
- Warehouse 2 has a total GFA of 1,328 m²
 - Warehouse GFA: 1,186 m²
 - Office GFA: 142 m²
- Warehouse 3 has a total GFA of 1,323 m²
 - Warehouse GFA: 1,186 m²
 - Office GFA: 137 m²
- Warehouse 4 has a total GFA of 1,173.3 m²
 - Warehouse GFA: 1,072.5 m²
 - Office GFA: 140.9 m²
- Maximum building height of 19.6 m
- Provision of 233 on-site parking spaces split across the site.
- Construction of a private internal driveway along the northern boundary of 125 Lawson Road servicing Warehouses 2-4.
- Construction of Regional Basin.
- Associated landscaping work and deep soil areas (comprising communal open space areas).
- Provision of road corridors providing an option for future delivery of local roads by the relevant roads authority.

EGA note that the proposed excavation depths for the project are between 4-6 m bgl, from west to east across the site footprint.

It is also noted that groundwater is not proposed to be a resource utilised during operation of the site.

1.3 Objectives

The objectives of this investigation were to:

- Provide a methodology for the assessment of potential groundwater accumulations against adopted re-use / discharge criteria; and
- Provide recommendations on dewatering procedures and any further investigation or management requirements.

1.4 Project Considerations

This report has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) dated 23 April 2025 and issued for the SSDA (SSD-81662708). Specifically, this report has been prepared to respond to the SEARs requirement and government agency comments issued below.

Table 1.4.1 SEARs Requirements & Government Agency Comments

Governing Document	Item	Consideration / Description of Requirement	Reference Section
SEARs (SSD-81662708)	Water Management	Water Management – a Water and Stormwater Management Plan prepared in accordance with Department’s ‘Technical guidance for achieving Wianamatta–South Creek stormwater management targets’ (2022) and ‘MUSIC modelling toolkit for Wianamatta–South Creek’, including: <ul style="list-style-type: none"> An assessment of potential surface and groundwater impacts (both quality and quantity) associated with the development, including potential impacts on watercourses, riparian areas, groundwater, and groundwater-dependent communities nearby in accordance with relevant water quality guidelines and the Department of Climate Change, Energy, the Environment and Water - Water Group (DCCEEW-Water) Groundwater Toolkit 	See AT&L (2025a, 2025b).
		Details of any mapped waterways or riparian corridors on site including: <ul style="list-style-type: none"> A description of groundwater and surface water conditions and all works/activities that may intercept, extract, use, divert or receive surface water and/or groundwater (both temporary and permanent) A surface water discharge assessment in accordance with relevant EPA guidelines that provides characterisation of water quality at the point of discharge against the relevant water quality criteria using a MUSIC water quality model Details of any surface or groundwater mitigation, management and monitoring activities and methodologies. 	<p>The proposed development is expected to interact with groundwater across the site as outlined with Section 1.1 and Section 1.2.</p> <p>See Stormwater Management and Erosion Sediment Controls outlined in AT&L (2025a, 2025b).</p> <p>Requirements for assessment and reuse of groundwater within the site are provided in Table 6.4.1. Surface water is addressed in AT&L 2025a & 2025b.</p>

1.5 Scope of Work

- Review previous groundwater assessments, site information and proposed work plans; and
- Provide recommendations for further investigation and management of retained on-site stormwater accumulations.

2 SITE IDENTIFICATION

The site identification details, and associated information are presented in **Table 2.1**.

Table 2.1. Site Identification Information

Attribute	Description
Street Address	125 & 145-175 Lawson Road, Badgerys Creek NSW
Lot and Deposited Plan (DP)	Lot 1, DP226912 - 125 Lawson Road, Badgerys Creek NSW Lot 3, DP226912 - 145 Lawson Road, Badgerys Creek NSW Lot 4, DP226912 - 155 Lawson Road, Badgerys Creek NSW Lot 5, DP226912 - 165 Lawson Road, Badgerys Creek NSW Cnr Lot 6, DP226912 - 175 Lawson Road, Badgerys Creek NSW
Geographical Coordinates	33°53'2.1"S 150°45'22.6"E (Centre of site)
Site Area	Total Site Area ≈ 14.2 ha 125 Lawson Road – 2.02 ha 145 Lawson Road – 2.03 ha 155 Lawson Road – 2.04 ha 165 Lawson Road – 6.09 ha 175 Lawson Road – 2.04 ha
Local Government Area (LGA)	Liverpool City Council
Parish	Bringelly
County	Cumberland
Zoning	ENT - Enterprise Zone (125 Lawson Road, Badgerys Creek NSW) ENT - Enterprise Zone and ENZ – Environment and Recreation Zone (145, 155, 165, and 175 Lawson Road, Badgerys Creek NSW) (State Environmental Planning Policy (<i>Precincts - Western Parkland City</i>) 2021 - Western Sydney Aerotropolis)

The general layout and boundary of the site is set out in **Figure 1**.

3 GEOLOGY, ACID SULFATE SOILS, TOPOGRAPHY AND HYDROGEOLOGY

Regional geology, topography, soil landscape and hydrogeological information are presented in **Table 3.1**.

Table 3.1 Regional Setting Information

Attribute	Description
Climate	A review of the closest weather station to the site (Badgerys Creek AWS) indicated that the climate is relatively mild with average maximum temperatures ranging from 17.5 – 30.3 °C and minimum temperatures ranging from 3.3 – 8.2 °C. Rainfall is relatively varied across the year, ranging from 3.3 days of rain per month in August, to 8.2 average days of rainfall per month in March. Average monthly rainfall varied from 24.8 mm in July up to 108.4 mm in February.
Geology	A review of the Penrith 1:100,000 Geological Series Sheet (1 st Edition, 1991), indicated that the site is likely to be underlain by Quaternary alluvium derived from Wianamatta Group shales and Hawkesbury Sandstone and Mesozoic Middle Triassic Wianamatta Group Bringelly Shale consisting of shale, carbonaceous claystone, claystone, laminate, fine to medium-grained lithic sandstone, rare coal, and tuff.
Acid Sulfate Soils	<p>A review of the acid sulfate soil risk mapping layer accessed on the Environment NSW ‘eSpade V2.2’ web application, accessed 8 August 2025, indicated that the site lies in an area mapped as ‘No Known Occurrence’ with respect to acid sulfate soils. This infers that land management activities are not likely to be affected by acid sulfate soil materials.</p> <p>Further assessment of acid sulfate soils in the context of this investigation is considered by EGA as not warranted.</p>
Topography	<p>Generally, the local landscape consists of gently undulating rises on Wianamatta Shale with local relief 10–30 m and slopes generally >5% but occasionally up to 10%. Crests and ridges are broad (200–600 m) and rounded with convex upper slopes grading into concave lower slopes.</p> <p>The site is located at an elevation approximately 51 m to 62 m Australian height Datum (AHD) and gradually sloping to the west.</p>
Hydrology and Hydrogeology	<p>The nearest surface water course was identified to be Badgerys Creek which runs through the western portion of 175 Lawson Road, Badgerys Creek NSW. Badgerys Creek continues flowing north, adjacent to the western boundary of 165 Lawson Road, Badgerys Creek.</p> <p>There are several man-made dams located on neighbouring properties surrounding the sites.</p> <p>Based on distances to the nearest surface water course, groundwater flow in the vicinity of the site is considered likely to be towards the north-west.</p> <p>A review of the NSW Office of Water groundwater database undertaken on 6 March 2025 and indicated there was one (1) registered groundwater features located within a 500m radius of the site:</p> <ul style="list-style-type: none"> • GW105016 – private use bore for live-stock, standing water level (SWL): 53.0 m. <p>Groundwater levels within the site are believed to range from levels > 4m bgl in the east of site to approximately 2 m bgl in the west of site, in line with the site elevation (EGA 2025).</p>
Adjacent Sensitive Receptors	<p>The closest ecological receptors include onsite and adjacent vegetation and watercourses.</p> <p>A review of the Bureau of Meteorology Groundwater Dependent Ecosystem Map identified South Creek, approximately 750 m bgl east of site as a high potential groundwater dependent ecosystem.</p> <p>The closest sensitive human receptors are future construction and maintenance workers on site.</p>

4 PREVIOUS GROUNDWATER ASSESSMENTS

As part of the preparation of this management plan, the following assessment was reviewed;

- AT&L 2025b, 'Cross Link Industrial Estate – Soil and Water Management Plan - 125 & 145-175 Lawson Road, Badgerys Creek (Lots 1 and 3-6 DP66912)', dated 13 June 2025, ref: REP004-01-25-1278- SWMP;
- AT&L 2025a, 'Cross Link Industrial Estate – Integrated Water Cycle Management Plan - 125 & 145-175 Lawson Road, Badgerys Creek (Lots 1 and 3-6 DP66912)', dated 27 June 2025, ref: EP002-01-25-1278-IWCMP; and
- Environmental Group Australia (2025), 'Groundwater Depth Assessment - 125 & 145-175 Lawson Road, Badgerys Creek NSW', dated 11 August 2025, ref: 306-LTR-01-110825.v1f.

A summary of the reviewed reports is provided below in **Section 4.1** to **4.3**.

4.1 AT&L 2025a – Soil and Water Management Plan

The Soil and Water Management Plan (SWMP) was prepared by AT&L to accompany a State Significant Development Application (SSDA) SSD- 81662708 for an Industrial Estate. The project seeks detailed approval for a new Industrial Estate comprising large and small format warehousing and distribution centres at 125 & 145-175 Lawson Road Lawson Road, Badgerys Creek (the site).

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD- 81662708).

This report concluded that the proposed development was suitable and warranted approval, subject to the implementation of the following mitigation measures:

- Type A sediment Basin designed in accordance with IECA Standards and Guidelines;
- Other minor erosion and sediment controls designed in accordance with relevant standards; and
- Proposal to use the future regional basin as a temporary Type A sediment basin, with the intention of modifying the basin to a regional basin during Phase 4 of Construction (Site Stabilisation).

AT&L noted the following soil characteristics:

- The soils within the site were considered to be **Non-saline** to **Slightly Saline**.
- The soils within the site were considered to be **Non-aggressive** to **Mild** to both steel and concrete; and
- The soils within the site were considered to be **Non-sodic** to **Highly Sodic**.

Following the implementation of the above mitigation measures, the remaining impacts were considered appropriate by AT&L.

4.2 AT&L 2025b – Integrated Water Management Plan

The Integrated Water Cycle Management Plan (IWCMP) was prepared by AT&L to accompany a State Significant Development Application (SSDA) (ref.: SSD-81662708) for an Industrial Estate. The project seeks detailed approval for a new Industrial Estate comprising large and small format warehousing and distribution centres at 125 & 145-175 Lawson Road Lawson Road, Badgerys Creek (the site).

The report concluded that the proposed development was suitable and warranted approval, subject to the implementation of the following mitigation measures.

- Implementation of an Integrated Water Cycle Management Plan that incorporates stormwater quality improvement, quantity reduction and flow mitigation measures as detailed in this report and the civil engineering drawings, all in accordance with:
 - The Western Sydney Aerotropolis DCP Phase 2;
 - The Wianamatta-South Creek stormwater targets; and
 - Sydney Water’s Stormwater Scheme Infrastructure Design Guidelines (Draft)and in consideration of:
 - Connection to Country Principles.
- Connection to the regional recycled water supply from the AWRC when the Sydney Water recycled water reticulation network becomes operational.

Following the implementation of the above mitigation measures, the remaining impacts were considered appropriate by AT&L.

4.3 EGA 2025 – Groundwater Depth Assessment

Environmental Group Australia Pty Ltd (EGA) were engaged by Formus Property Pty Ltd (the client), to undertake a Groundwater Depth Assessment for the site located at 125 & 145-175 Lawson Road, Badgerys Creek NSW (hereafter referred to as ‘the site’).

Project Appreciations

The report was prepared in support of a development at 125 & 145-175 Lawson Road, Badgerys Creek (the site). The project seeks to deliver a new Industrial Estate comprising large and small format warehousing and distribution centres within Badgerys Creek.

Specifically, the SSDA seeks approval for the following:

- Construction of an Industrial Estate, comprising four (4) warehouse buildings with a total of 46,153.9 m² of warehouse and ancillary office GFA. It will deliver a range of large and small format warehouse and distribution centres, as follows:
- Warehouse 1 has a total GFA of 40,505.5 m²
 - Warehouse GFA: 38,572.0 m²
 - Office GFA: 1,877.5 m² (plus 60 m² dock office)
- Warehouse 2 has a total GFA of 1,328 m²
 - Warehouse GFA: 1,186 m²
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- Warehouse 3 has a total GFA of 1,323 m²
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 - Office GFA: 137 m²
- Warehouse 4 has a total GFA of 1,173.3 m²
 - Warehouse GFA: 1,072.5 m²
 - Office GFA: 140.9 m²
- Maximum building height of 19.6 m

- Provision of 233 on-site parking spaces split across the site.
- Construction of a private internal driveway along the northern boundary of 125 Lawson Road servicing Warehouses 2-4.
- Construction of Regional Basin.
- Associated landscaping work and deep soil areas (comprising communal open space areas).
- Provision of road corridors providing an option for future delivery of local roads by the relevant roads authority.

EGA noted that the proposed excavation depths for the project are between 4-6 m bgl, from west to east across the site footprint.

Fieldworks

EGA undertook a visual investigation on 6 August 2025 to determine the depth to groundwater underlying the site. A total of twelve (12) boreholes (BH01 – BH12) were established across the site by Geo Core via a Ute Mounted Hydraulic Drill Rig fitted with a 100 mm solid flight auger.

EGA noted that weather conditions during the investigation were mostly clear. A review of the Bureau of Meteorology climate data outlined that in the days prior to the investigation, moderate amounts of rain were noted for the 2nd, 3rd, 4th and 5th of August 2025 (\approx 21.6 mm, 16.8 mm, 2.4 mm and 0.4 mm, respectively) across the suburb of Badgerys Creek NSW (Station: Badgerys Creek AWS, 067108).

Observations of Groundwater

Groundwater was identified during the drilling process within 'BH04' at approximately 2.0 m bgl. CLAY soils were observed to be heavily saturated. Groundwater was not directly identified within the remaining boreholes advanced across the site.

Boreholes were revisited at the completion of the event determine if groundwater seepage had occurred within any of the boreholes.

Groundwater seepage was encountered within the following boreholes, BH01, BH02, BH03, BH04, BH05, BH06 and BH07.

Based on seepage levels and soil saturation levels (visual), the groundwater levels within the site are believed to range from levels > 4m bgl in the east of site to approximately 2 m bgl in the east of site. This is generally in line with the drop in site elevation from east to west.

Conclusions and Recommendations

Based on EGA's assessment of the desktop review information, in the context of the project objectives, EGA made the following conclusions:

- Groundwater was identified within seven (7) boreholes via observations of groundwater seepage and soil saturation levels;
- Groundwater levels within the site were believed to range from levels > 4m bgl in the east of site to approximately 2 m bgl in the west of site, in line with the site elevation;
- The proposed excavation depths of 4-6 m bgl across the site, were considered likely to interact with groundwater within the site; and
- A Dewatering Management Plan should be prepared for the site, detailing the requirements for discharge of seepage water, during operation of the site.

4.4 Conclusions

As the requirements for retention and discharge of stormwater / surface run-off have been outlined by AT&L (2025a, 2025b), the dewatering methodology within this report are limited to groundwater seepage within excavation footprints during development.

5 ENVIRONMENTAL MANAGEMENT REQUIREMENTS

5.1 Key Relevant Requirements and Documentation

The following relevant legislation, regulation, guidelines, approvals, licenses, and permits have been identified to be relevant for the site.

5.1.1 Legislation and Regulations

- Environmental Planning and Assessment Act 1979;
- Contaminated Land Management Act 1998;
- Protection of the Environment Operations Act 1997;
- Water Management Act 2000; and

5.1.2 Guidelines and Standards

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)
- National Health and Medical Research Council (NHMRC) *Australian Drinking Water Guidelines* (2011), updated August 2018
- Roads and Maritimes Services (2011) *Technical Guidelines: Environmental Management of Construction Site Dewatering* (2011)
- NSW department of Environment and Conservation (NSW DEC) *Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales* (2004)
- Roads and Maritimes Services *8km Water Sensitive Design Guidelines*, May 2017
- Technical Guidance for Achieving Wianamatta-South Creek Stormwater Management Targets (2022).

5.1.3 General Dewatering Requirements

- Submission of a Dewatering Management Plan (DMP) from a suitably qualified environmental consultant detailing the proposed disposal method and the following:
 - Water retention methods (if required);
 - Water Quality Assessment;
 - Water Quantity Discharge Amounts;
 - Treatment Methods (if required);
 - Status of Groundwater Levels;
 - Action plan in the event of issues arising (e.g. odours, pollution events, water quantity and quality fluctuations) with corrective methods. These events would trigger immediate additional reporting (within 18 hours of event), with review and approval by Council prior to release of waters.

Any groundwater accumulating in excavations on-site shall not be discharged unless the following criteria are met:

1. The concentration of total suspended solids (TSS) in the water to be discharged does not exceed 50 mg/L.
2. The pH of the water to be discharged is between 6.5 and 8.5.
3. The water to be discharged contains no visible oil or grease.
4. If a flocculant (e.g. alum or gypsum) is used, then calculated dosing rates and holding periods will need to be submitted during required weekly reporting.
5. If alum has been used to reduce suspended solids, the concentration of aluminium in the water to be discharged must be sampled, analysed, reported and must meet relevant requirements; and
6. The water to be discharged does not contain any substances known to be toxic to aquatic life; and
7. The flow rate of discharged water is less than the capacity of the receiving stormwater drain; and
8. A copy from a NATA accredited laboratory test results for TSS, pH, and aluminium (if applicable) confirming the water to be discharged meets criteria 2, 3, and 4 (if applicable) as stated above is submitted to Council's Environment Planning Team.

Alternatively, such waters from site are to be removed by tanker for disposal at a NSW Environment Protection Authority licensed waste facility.

6 DEWATERING PLAN

6.1 Groundwater

As stormwater management methodology has been outlined for the site (AT&L 202a, 2025b), the discharge methodology below applies exclusively to groundwater seepage within open excavations within the site.

The proposed excavation depths for the project are proposed to be between 4-6 m bgl, from west to east across the site footprint.

Based on seepage levels and soil saturation levels observed in EGA 2025, the groundwater levels within the site are believed to range from levels > 4m bgl in the east of site to approximately 2 m bgl in the east of site.

As such, it is considered highly likely that excavations within the site will interact with the underlying groundwater table.

6.2 Water Discharge

Groundwater accumulating in excavations on-site or in the settlement/treatment system (if required) must not be discharged to Council's stormwater systems, under council regulations.

Where groundwater is environmentally suitable, it may be re-used within the site or re-introduced into the local environment via managed infiltration into underlying soils. Groundwater proposed for re-use will require assessment by a suitably experienced environmental consultant, in line the parameters provided in **Table 6.4.1**, prior to dewatering activities.

6.3 Water Retention Methods

During construction phase activities, a sediment basin for stormwater retention has been proposed to be constructed within the western portion of the site (AT&L 2025a). The temporary basin is proposed for modification into a regional basin as part of later development phases.

As groundwater is not permitted for discharge into council stormwater systems, the retention of groundwater within the proposed basin is not acceptable.

The construction of a purpose-built groundwater sediment basin is not a requirement for the site, however, may be considered for the retention of groundwater, prior to assessment and discharge. Exact specifications and requirements of such a basin may be confirmed during the development phase.

General design should align with Water Sensitive Urban Development principles of sediment basin construction, such as;

- 1.5 - 2 m depth;
- 1.5 m wide safety bench around the perimeter;
- Reinforced access to base of sediment basin (suitable for heavy vehicle access);
- Reinforced side walls, 300 mm higher than normal water levels;
- Inclusion of an impermeable liner; and
- Vegetation of side walls with suitable species.

6.4 Water Quality Assessment

Prior to discharge of any stored water on-site, an assessment by a suitably experienced environmental consultant is required. The assessment will comprise a visual assessment of retained waters and sampling for the following parameters:

- pH (Field and/or NATA accredited laboratory);
- Total Suspended Solids (NATA accredited laboratory);
- Oil and Grease (Field and/or NATA accredited laboratory); and
- Aluminium (NATA accredited laboratory – only if alum-based flocculant has been used).

Assessment criteria are summarised in **Table 6.4.1** below.

Table 6.4.1 Assessment Criteria

Parameter	Water Quality Criteria
General Requirements	Minimise Soil Exposure (where possible) Drainage and Stormwater Control Sediment Capture and Minimising Contaminant Release
pH	6.5 – 8.5
Total Suspended Solids	50 mg/L
Oil and Grease	No sheens, oil, or grease observed / Less than laboratory limit of reporting
Aluminium	55 ug/L (95% Freshwater Protection, ANZECC 2000) < 0.2 mg/L (NHMRC Australian Drinking Water Guidelines)

Following receipt of results, a water quality assessment report will be prepared by the environmental consultant and submitted to the client prior to discharge.

6.5 Water Discharge Quantities

At this stage, expected quantities of groundwater to be discharged are unknown. An estimate of water volumes will be undertaken prior to any water discharge.

6.6 Water Treatment Methods

Should groundwater retained on-site not meet assessment criteria defined in **Table 6.4.1** then further treatment is required prior to discharge. Alternatively, water that doesn't meet discharge criteria may be removed by tanker for off-site disposal at a licensed receiving facility.

Treatment where required must be developed on a case-by-case basis by the supervising environmental consultant and will be detailed in the water quality assessment report where retained water requires discharge from site. Some water treatment examples are provided below.

6.6.1 Flocculation

Should suspended solids exist outside of the acceptable site criteria, then an appropriate flocculant such as Alum (aluminium sulfate) may be added to the water storage area. The flocculant will remove suspended solids from the solution and allow them to settle at the bottom of the storage area. Care must then be taken to avoid pumping from the bottom of the area during discharge.

6.6.2 Settling Tank

Should suspended solids exist outside of the acceptable site criteria and if discharge is to occur over a longer period of time, then a settling tank may be incorporated between the water storage area and discharge point. The settling tank will provide an opportunity for suspended solids to settle and sink to

the bottom of the tank, allowing clarified water to continue through a set of grates to a holding tank, prior to discharge.

6.6.3 pH Dosing

Should pH measurements exist outside of the acceptable site criteria, then neutralisation with buffer solutions will be required to obtain the desired solution pH. This can be achieved by adding a buffer solution or powder to the water storage area and measuring pH over the course of additions. Alternatively, particularly if larger quantities of water require discharge or if discharge is to occur over a longer period of time, then a pH dosing tank may be utilised to adjust pH levels prior to discharge.

6.7 Groundwater

The proposed excavation depths for the project are proposed to be between 4-6 m bgl, from west to east across the site footprint.

Based on seepage levels and soil saturation levels observed in EGA 2025, the groundwater levels within the site are believed to range from levels > 4m bgl in the east of site to approximately 2 m bgl in the east of site.

As such, it is considered highly likely that excavations within the site will interact with the underlying groundwater table.

6.8 Water Discharge

Groundwater accumulating in excavations on-site or in the settlement/treatment system (if required) must not be discharged to Council's stormwater systems, under council regulations.

Where groundwater is environmentally suitable, it may be re-used within the site or re-introduced into the local environment via managed infiltration into underlying soils. Groundwater proposed for re-use will require assessment by a suitably experienced environmental consultant, in line the parameters provided in **Table 6.4.1**, prior to dewatering activities.

6.9 Unexpected Event Protocol

Should an unexpected water event occur on-site, e.g. odours, pollution event then the following plan must be followed:

1. Should the event involve water migrating off-site, all attempts are to be made to stop and prevent the water / pollution from migrating off-site
2. Engage a suitably qualified and experienced environmental consultant to undertake an assessment and prepare a specific methodology for investigation and remediation of the problem
3. Advise Liverpool City Council within 24 hours of the event occurring;
4. Undertake recommended corrective actions advised by the environmental consultant; and
5. Provide any documentation (including any assessment reports, or laboratory results) to council for review and approval by council prior to release of any waters.

6.9.1 Uncontained Fuel / Oil Spill

Any uncontained fuel or oil spills on-site must immediately be managed with a spill kit. All attempts must be made to prevent any fuel or oil from entering water storage areas or stormwater system.

The supervising environmental consultant is to be notified immediately of any uncontained fuel or oil spills and if required, engaged to undertake an assessment of the spill.

7 STATEMENT OF LIMITATIONS

The findings presented in this report are based on specific searches of relevant, government historical databases and anecdotal information that were made available during the course of this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This report has been prepared solely for the use of the client and local planning authority to whom it is addressed and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this report. All conclusions and recommendations made in this report are of the professional opinions of personnel involved with the project and while normal checking of the accuracy of data has been conducted, any circumstances outside the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Environmental Group Australia Pty Ltd. Should information become available regarding conditions at the site including previously unknown sources of contamination, SE reserves the right to review the report in the context of the additional information.

This report must be reviewed in its entirety and in conjunction with the objectives, scope and terms applicable to EGA's engagement. The report must not be used for any purpose other than the purpose specified at the time EGA was engaged to prepare the report.

Logs, figures, and drawings are generated for this report based on individual EGA consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for its inclusion in other reports, plans or documents, nor should that data and/or information be separated from this report in any way.

Should additional information that may impact on the findings of this report be encountered or site conditions change, EGA reserves the right to review and amend this report.

8 REFERENCES

AT&L 2025b, 'Cross Link Industrial Estate – Soil and Water Management Plan - 125 & 145-175 Lawson Road, Badgerys Creek (Lots 1 and 3-6 DP66912)', dated 13 June 2025, ref: REP004-01-25-1278- SWMP;

AT&L 2025a, 'Cross Link Industrial Estate – Integrated Water Cycle Management Plan - 125 & 145-175 Lawson Road, Badgerys Creek (Lots 1 and 3-6 DP66912)', dated 27 June 2025, ref: EP002-01-25-1278-IWCMP;

Environmental Group Australia (2025), 'Groundwater Depth Assessment - 125 & 145-175 Lawson Road, Badgerys Creek NSW', dated 11 August 2025, ref: 306-LTR-01-110825.v1f;

Environmental Planning and Assessment Act 1979;

Contaminated Land management Act 1998;

Protection of the Environment Operations Act 1997;

Water Management Act 2000;

Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)

National Health and Medical Research Council (NHMRC) *Australian Drinking Water Guidelines* (2011), updated August 2018

Roads and Maritimes Services (2011) *Technical Guidelines: Environmental Management of Construction Site Dewatering* (2011)

NSW department of Environment and Conservation (NSW DEC) *Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales* (2004)

Roads and Maritimes Services *8kmWater Sensitive Design Guidelines*, May 2017

Landcom 2004, 'Managing Urban Stormwater Soils and Construction', 2004

NSW DEC 2006, 'Managing Urban Stormwater – Harvesting and Reuse', April 2006

NEPM ASC 2013 - National Environment Protection Council (NEPC) 2013A, 'Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'.


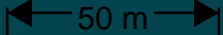

Roads and Maritimes Services – *Water Sensitive Design Guidelines*, May 2017

ATTACHMENT 1

FIGURES



Source: Nearmap (maps.au.nearmap.com)

	 50 m		Site Layout		
	Client Name:	Formus Pty Ltd		Figure Number:	1
	Project Name:	Dewatering Management Plan		Figure Date:	11 August 2025
Project Location:	125 & 145-175 Lawson Road, Badgerys Creek NSW	Report Number:		3006-DMP-01-110825.v1f	