

3 April 2020

Fei Chen
Project Manager
Tactical Group
Via email: fchen@tacticalgroup.com.au

MPW Stage 3: Geology, Soils and Contamination Impacts Assessment

Dear Fei,

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) has been engaged by Qube (the client) to provide environmental consulting services for the latest stage of the Moorebank Intermodal Precinct Project, MPW Stage 3 (MPW S3). MPW S3 involves land subdivision and the re-establishment of a temporary construction, operation and maintenance compound, and ancillary works. Tactical Group (as the Superintendent) has directed JBS&G to undertake an assessment of geology, soil and contamination impacts associated with MPW S3 and the associated re-establishment of the compound. The development proposed in MPW S3 will occur as shown in the attachment, MPW S3 Construction Compound Location (**Attachment 2**).

The area of MPW S3 has been previously considered and assessed as part of State Significant Development (SSD) 5066 MPW Concept and Stage 1 approval (including SSD 5066 MOD 1), and the SSD 7709 MPW Stage 2 approval. The current assessment is to support the Environmental Impact Assessment (EIS) being prepared as part of an application for the MPW S3 development consent.

This assessment has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for MPW S3 (SSD 10431), see **Table 1.1** below.

Table 1.1: MPW Stage 3 Conditions of Consent

MPW Stage 3 (SSD 10431)	
Relevant Condition of Consent	How Addressed
11. Contamination – including but not limited to details of remediation to be or already completed on site.	The completed remediation is outlined in Section 2 Background and Section 3 Geology and Soils . A Contamination Management Plan (CMP) provides a framework for residual contamination in previously inaccessible areas, as well as unexpected finds (see Section 4 Contamination)

2. Background

The Geology, Soil and Contamination component of the MPW Stage 2 Proposal - Environmental Impact Statement (MPW Stage 2 EIS) (Arcadis, 2016a¹) drew upon the following reports:

- *Geotechnical Interpretive Report* (Golder, 2016a);

¹ *Moorebank Precinct West - Stage 2 Proposal Environmental Impact Statement – (SSD16-7709)*. Arcadis Australia Pacific Pty Limited, October 2016 (Arcadis 2016a)

- *Moorebank Intermodal Terminal Contamination Summary Report Stage 2 SSD* (Golder, 2016b); and
- *Stormwater and Flooding Environmental Assessment Report* (Arcadis, 2016b).

The reports were included as appendices to the MPW Stage 2 EIS (Arcadis 2016a).

Subsequent to the approval of MPW Stage 2, the following works relating to implementation of the site Remedial Action Plan (RAP) (Golder 2016c²) have been completed and reported (JBS&G 2019a³ and JBS&G 2019b⁴):

- Assessment of contamination below buildings potentially impacted by the use of pesticides and polychlorinated biphenyl (PCB) compounds;
- Removal of fuel infrastructure identified on the site, including underground storage tanks, and fuel lines;
- Removal of high risk inground services lines;
- Removal of anthropogenic fill sites (predominately impacted by asbestos, as well as isolated hydrocarbon and heavy metal contamination impacts);
- Assessment as required for the removal of unexpected finds (principally asbestos containing material (ACM) pipes and pits);
- The removal of asbestos in soils identified during site investigations, including in stockpiles;
- Characterisation of excavated materials from remedial areas and preparation of waste classification reports for off-site disposal;
- Completion of air monitoring during excavation, remediation, and off-site disposal of ACM and asbestos fines / fibrous asbestos (AF/FA) impacted material;
- Assessment of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in site soils and groundwater to support the remediation of the site in accordance with the RAP (Golder, 2016c);
- Removal of unexploded ordnance (UXO) and explosive ordnance waste (EOW) waste encountered during remedial work; and
- Preparation of a validation report detailing the remediation and validation works in accordance with relevant guidelines and the RAP.

In addition, remediation works have been completed under the *Moorebank Precinct East Stage 1 RALP No. 1 Remediation Action Plan* (Coffey 2017) in the southern area of MPW S3.

Imported fill was required during the site remediation when no other suitable material existed on-site for reuse, and finished surface levels were required to be above pre-remediation levels. For the imported fill material required to raise the level of the site, assessments were undertaken in accordance with the RAP (Golder 2016c) and documented in the validation report (JBS&G 2019a).

² *Land Preparation Works Stage 1 and Stage 2 – Remediation Action Plan*. Golder Associates September 2016 (2016c)

³ *Remediation Validation Report, Land Preparation Work – Demolition and Remediation Moorebank Intermodal Company Property West, Moorebank, NSW*. JBS&G Australia Pty Ltd, January 2019 (JBS&G 2019a);

⁴ *Site Wide Groundwater Assessment Report Land Preparation Work - Demolition and Remediation Moorebank Intermodal Company Property West, Moorebank, NSW*. JBS&G Australia Pty Ltd, February 2019 (JBS&G 2019b)

3. Geology and Soils

Golder Associates undertook geotechnical (Golder 2016a) and land contamination (Golder 2016b) investigations in support of the MPW Stage 2 development application, inclusive of the MPW S3 area.

It was determined that the greatest risk to the site's geology and soils would be during the construction phase of the MPW Stage 2 development when significant ground disturbance would be required to level and raise the site, while temporary stockpiling, and construction of internal roads and structures would also expose soils, creating the risk of erosion and sedimentation. It was not anticipated that excavations on site during construction would intercept the watertable and, except for the construction of detention (OSD) channels, it was unlikely to encounter acid sulfate soils or areas of potential acid sulfate soils.

During the remediation works and importation of fill undertaken in 2017-19, various soil and water management plans and erosion and sediment control plans were developed and implemented to mitigate the identified environmental risks. During the works no significant incident in relation to the potential erosion and sedimentation risk was reported.

For MPW S3 it is proposed to continue to mitigate the potential risk of erosion and sedimentation via the existing Construction Soil and Water Management Plan (CSWMP) prepared for MPW Stage 2, and revised as required, to accommodate MPW S3 conditions. The CSWMP will replicate the controls and mitigation measures developed for the earlier stages of work and updated throughout the execution of the works (SIMTA 2019⁵).

MPW S3 is located on a generally level area, several metres above the Georges River and it is not anticipated that the water table and/or acid sulfate soils will be encountered during the re-establishment of the works compound, or ancillary works.

Once constructed, the operation and maintenance of the compound would have minimal impact on soils as the site would be stabilised with suitable materials. Stabilisation would include fill materials and hardstand areas which would significantly reduce the risk of on-site erosion.

In summary, the risk of erosion and sedimentation for the proposed MPW S3 development can be mitigated by implementation of a CSWMP such that there is no amplification or cumulative impact associated with the proposal.

4. Contamination

The Contamination Summary Report (Golder, 2016b) outlined the known contamination risks for MPW Stage 2, namely asbestos in soils, anthropogenic fill, remnant UXO, EO and EOW, trichloroethylene (TCE) in groundwater, and perfluoroalkyl and polyfluoroalkyl substances (PFAS). The contamination risks were addressed via the implementation of Remedial Action Plans (RAP, Golder 2016c and Coffey 2017) as outlined in **Section 2** above, and the implementation of complementary soil and water management plans. A validation report was prepared (JBS&G 2019a and 2019b) to document the outcomes of the remediation.

Access to some vegetated areas was restricted during the remediation, subject to finalising a BioBanking Agreement Area (Offset area) for MPW. Condition 164 (c) of SSD 7709 requires that for those areas where vegetation is proposed to be cleared, a Contamination Management Plan (CMP) must be prepared in consultation with the Site Auditor detailing the location and nature of the

⁵ Construction Soil and Water Management Plan, Moorebank Precinct West Stage 1 (Rev SIMTA.002). SIMTA October 2019 (SIMTA 2019).

contamination and the proposed remediation and/ or management measures that will be undertaken to address the on-site and potential off-site impacts.

A CMP (EP Risk 2020⁶) has been developed for Moorebank Precinct West which addresses the vegetation clearance that will precede the MPW S3 development, as well as meet the relevant EPBC Act conditions of approval for EPBC 2011/6086. The CMP (EP Risk 2020) includes the integration of environmental mitigation and monitoring measures during the construction phase for those areas not previously accessible (i.e. vegetated) during remediation.

All remediation in the MPW S3 area and identified in the RAPs (Golder 2016c and Coffey 2017) was completed in 2019, with the exception of a soil stockpile in a restricted access location (Golf Course SP1). However, the CMP (EP Risk 2020) provides the framework for managing Golf Course SP1 and unexpected finds, as well as monitoring during the work.

In summary, the contamination risk for the proposed MPW S3 development can be mitigated by implementation of the CMP (EP Risk 2020) such that there is no amplification or cumulative impact associated with the proposal.

Should you require clarification, please contact the undersigned on 02 8245 0300 or by email smolinari@jbsg.com.au.

Yours sincerely:



Seth Molinari
Principal Contaminated Land
JBS&G Australia Pty Ltd

Attachments

1. Limitations
2. MPW S3 Construction Compound Location

⁶ Contamination Management Plan, Moorebank Precinct West. EP Risk Management Pty Ltd, April 2020 (EP Risk 2020).

Attachment 1 – Limitations

This report has been prepared for use by the client who commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission, including use by the Site Auditor acting as an agent of the client in this respect. No warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

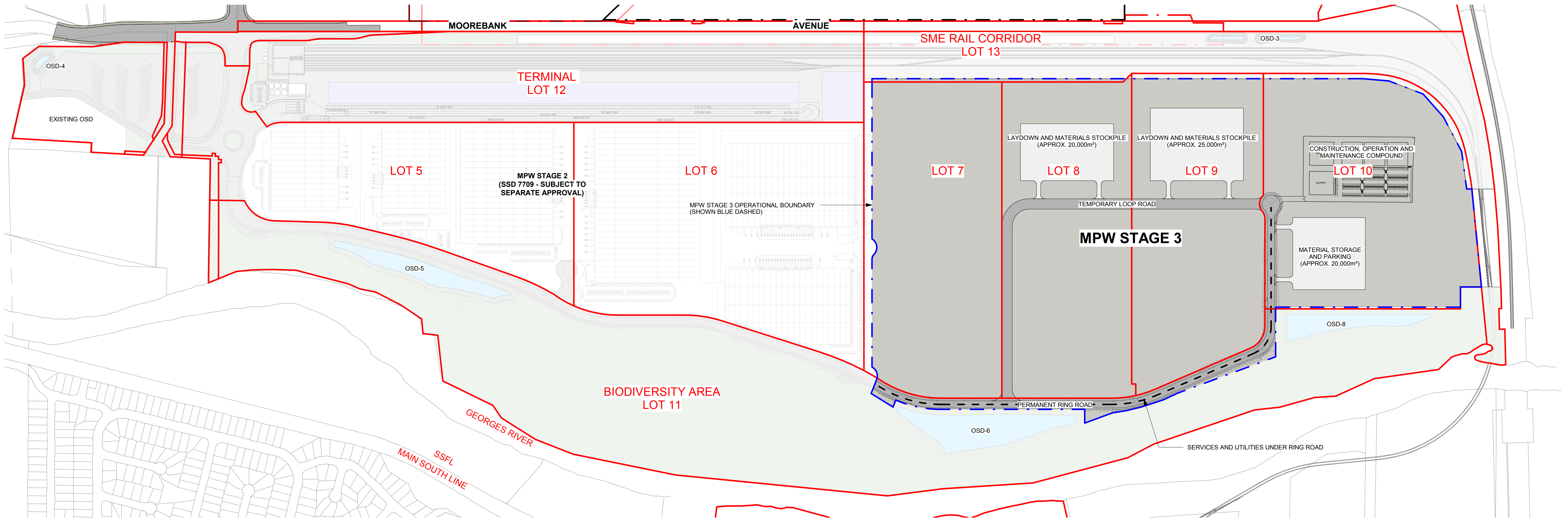
The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in-full including all attachments as originally provided to the client by JBS&G.

Limited sampling and laboratory analyses were undertaken as part of the investigations reviewed, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the stockpile or subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site or material investigated, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Attachment 2 - MPW S3 Construction Compound Location



Notes
-This drawing and design is subject to Reid Campbell (NSW) Pty Ltd copyright and may not be reproduced without prior written consent.
-Contractor to verify all dimensions on site before commencing work.
-Report all discrepancies to project manager prior to construction.
-Figured dimensions to be taken in preference to scaled drawings.
-All work is to conform to relevant Australian Standards and other Codes as applicable, together with other Authorities' requirements and regulations.
NSW Registered Architect Mark David Roach, 10332
NSW Registered Architect James Webb, 10187

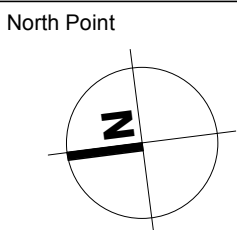
Issue	Description	Date	DR	CH
A	Issue for Information	10/12/2019		
B	Issue for Information	13/12/2019		
C	Issue for Information	20/12/2019		
D	Issue for Information	16/01/2020		
E	Issue for Information	23.04.2020	AM	MF

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**PRECINCT
MASTER PLAN**



Project
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PARK**
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MOOREBANK, NSW
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Drawing Title STAGE 3 COMPOUNDS	
Drawing Number PIWW-RCG-AR-SKC-157	Issue E