

JBS&G 64627 – 155,779

L004 (Interim Audit Advice Tarago Woodlawn Siding Rev 0)

17 November 2023

Joanne McLoughlin

Project Manager – Land Management, Regional Property & Asset Renewal | Network & Assets

Transport for NSW

L004 Interim Audit Advice (0503-2303-004) – Tarago Woodlawn Siding NSW

Dear Joanne,

1. Introduction and Background

Andrew Lau of JBS&G Australia Pty Ltd (JBS&G), has been engaged by Transport for NSW (TfNSW, the client) to conduct a site audit on a portion of the Goulburn – Bombala Country Regional Network (CRN) rail corridor in Tarago NSW identified as part Lot 22 in Deposited Plan (DP) 1202608 (the site). The site occupies a strip of land of approximately 7.5 hectares. The extent of the site area and the location of the site are shown in Figure F1, in Attachment 2.

The site incorporates the former Woodlawn Mine ore concentrate load-out complex which operated between the 1970s and 1990s. The Woodlawn Mine which operated between 1978 and 1998 producing lead, zinc and copper concentrates was located approximately eight kilometres to the west of the railway line. Historical load out of ores from trucks to rail cars for processing has been identified as a potential source of contamination of the site. The Tarago Railway Station is located in the central portion of the site.

On 25 March 2020, the rail corridor at Tarago (part Lot 22 DP 1202608) was declared (Declaration No. 20201103) to be significantly contaminated land under s11 of by the *Contaminated Land Management Act 1997* (CLM Act) by the NSW EPA.

On 28 May 2020, the NSW EPA approved a Voluntary Management Proposal (VMP) (VMP No. 20211711) under the CLM Act to be undertaken by TfNSW for part of the Tarago Rail Corridor on part Lot 22 DP 1202608. The EPA determined that regulation of contamination from lead was required.

The EPA considered that *'soil and surface water (when present) at the site are contaminated with substances and the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997'* and that *'the substance of concern ("the Contaminant") in soil is lead'* is described as follows:

- *'lead concentrations in soil within the rail corridor (Lot 22 DP1202608) exceed national guideline values for the protection of human health and the environment'*
- *lead contamination has impacted adjacent land at 106 Goulburn Street, Tarago (Lot 1 DP816626), with soil found to contain lead at concentrations exceeding national guideline values for the protection of human health and the environment'*
- *there are complete exposure pathways to lead for occupants of 106 Goulburn Street, as well as potentially complete exposure pathways for persons working within the rail corridor and*
- *there are potentially complete exposure pathways for onsite and offsite ecological receptors'.*

On 9 March 2022, the NSW EPA issued a notice amending the VMP (Notice No. 20224403). The amendment was issued to reflect updated timelines due to changes in the methodology for the remediation works.

The VMP requires achieving the objectives for three stages of works within the specified timeframes. The stages are as follows:

- Stage 1 – Assessment of Contaminant at or Originating from the Site
- Stage 2 – Remediation Action Plan
- Stage 3 – Remediation and Validation

Objective O2 of Stage 1 of the VMP is to develop an action plan for interim management of risks to off-site receptors from the contaminant originating from the site.

Andrew Lau is a Site Auditor accredited by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997* (CLM Act 1997) (Accreditation Number 0503).

This interim audit advice (IAA) has been undertaken in accordance with the requirements provided by the client, to provide an independent review of the action plan prepared to manage risks posed to off-site receptors by lead contamination at the site. The objectives of this review were to assess the appropriateness of the measures proposed for the interim management of risks to identified receptors until such time that permanent remediation works are completed.

2. Report Reviewed

The following report was reviewed in the preparation of this IAA:

- *Tarago Lead Management Action Plan. Rev 7, 27 October 2023, Ramboll Australia Pty Ltd (Ramboll 2023).*

Review of the report has been undertaken against the requirements of *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines* (NSW EPA 2020) and the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC 2013).

The following reports were also considered as part of this audit and preparation of this IAA, with relevant background information included in **Section 3**:

- *Tarago Loop Extension Preliminary Human Health Risk Assessment. Draft, 25/09/2019, Ramboll Australia Pty Ltd (Ramboll 2019)*
- *Tarago Rail Corridor Environmental Data Gap Assessment. Rev 0, 30/01/2020, Ramboll Australia Pty Ltd (Ramboll 2020a).*
- *Tarago Rail Corridor and Tarago Area Detailed Site Investigation. Final, 29/07/2020, Ramboll Australia Pty Ltd (Ramboll 2020b).*

3. Site Description

The site details have been summarised in **Table 1**. Plans identifying the subject site have been presented in **Attachment 2**.

Table 1: Summary Site Details

Street Address	Accessed from Stewart Street and Goulburn Street Tarago NSW 2580
Property Description	Part Lot 2 in DP 1202608
Parish	Mulwaree
County	Argyle
Local Government Area	Goulburn Mulwaree Shire Council

Property Size	Approximately 7.5 hectares
Zoning	RU2 Rural Landscape (<i>Goulburn Mulwaree Local Environmental Plan 2009</i>)
Previous Use	Rail corridor and ore loadout complex
Current Use	Rail corridor
Proposed Use	Rail corridor

3. Site Condition

The site was reported (Ramboll 2020b) to comprise of a portion of the Goulburn-Bombala rail corridor in Tarago including the Tarago railway station. The former ore concentrate loadout facility associated with the Woodlawn Mine was located within the western side of the rail formation, approximately 20 metres north of the railway station, and has now been demolished. The site is fenced on the western boundary and partially fenced on the eastern boundary.

The former Tarago Station Masters Cottage residence is located to the east of the site, immediately to the north of the Tarago railway station. The site was reported to have been acquired by Transport Asset Holding Entity (TAHE) in 2021 and is understood to be vacant.

The site has a gentle gradient to the east towards Mulwaree River consistent with the surrounding topography. Three culverts direct surface water beneath the rail formation and off-site to the east. Surface water is discharged (after high rainfall events only) through agricultural land to the Mulwaree River; through drainage to a paddock; and along an informal flow path into a dam via the culverts.

4. Summary of Contamination Status / Issues

The Woodlawn deposit of zinc, lead and copper concentrates is reported to have been mined (Ramboll 2020a) between 1978 and 1998. The ore loadout facility infrastructure included a loop road for truck access from the south, truck dumping station, conveyor from dumping station to a large building and an undercover rail loading point. The loadout complex was demolished between 1997 and 2005.

Environmental investigations undertaken in the Tarago Station rail corridor between 2015 and 2019 (Ramboll 2020a and 2020b) had identified high concentrations of lead in soil along the rail corridor and within the fence line of the former Station Masters Cottage property that presented risks to human health and ecological receptors.

Within the rail corridor, ballast within the rail siding, loop line, main line and adjacent soils have been identified as being contaminated with lead. Lead impacted spoil had also been generated during loop extension works with approximately 750 cubic metres of fouled ballast remaining stockpiled (covered with geofabric and stabilised sand) at the site. The impacted materials have been identified to contain concentrations of lead above the site specific criteria of 2,200 mg/kg (Ramboll 2019).

High concentrations of lead arising from the site have been identified in soil, surface water, internal dust and sediment within rainwater tanks on adjacent land. Contamination has migrated via overland surface water flow and airborne dust.

5. Interim Management of Risks

To mitigate risks posed from potential exposure to identified lead contamination at the site, a lead management plan (action plan) has been developed for implementation until a permanent remedial strategy is implemented for the site.

TfNSW is ultimately responsible for the action plan with the manager of the Country Rail Network (CRN), UGL Regional Linx (UGL RL), being responsible for implementation. The action plan is required to be integrated with the management systems for the CRN.

The primary routes of exposure relevant to human health were identified as via ingestion following direct contact or inhalation of soil or dust. Primary routes of exposure leading to ecological uptake in the environment was identified to be through dust generation and transport of soils or dissolved contaminants in surface water and groundwater. Activities causing soil disturbance and dust generation can exacerbate the movement of soil contamination.

The adopted interim site management strategy requires isolation of contamination and implementation of engineering controls until such time remediation is completed or a permanent management solution is implemented. The principal hazard mitigation measure adopted is restriction of access to contamination by creation of an exclusion zone and implementation of strict management controls if access to the area is required. Specific hazard mitigation measures including maintenance requirements are outlined in the Lead Management Action Plan (Ramboll 2023). Where off-site contamination from the site is considered to have occurred, management measures for addressing rainwater tank sediment and indoor dust impacts have been outlined in the Lead Management Action Plan (Ramboll 2023).

Monitoring of the effectiveness of the action plan in mitigating off-site migration of contamination shall be verified through monitoring of surface water and airborne dust with corrective actions to be implemented if off-site migration is determined to be occurring.

The IEMP is required to be reviewed at least annually, and when contaminated material is removed/disturbed; monitoring indicates that off-site migration is occurring, or an exceedance of an exposure scenario has occurred; changes of land use occur; a long term lead management plan is in place; or when request by a relevant stakeholder health and safety representative.

6. Auditor Opinions / Requested Actions

Based on the information reviewed as part of this Interim Audit Advice and subject to the limitations in **Attachment 1**, the auditor opinions and requested actions to meet the requirements of the audit are presented in **Table 2**.

Table 2: Audit Opinions / Requested Actions

Audit Opinion	Requested Action
<p>The information provided by the consultant regarding site conditions, surrounding environment and site history is considered adequately complete for the purposes of identifying the contamination status of the site and presenting the purpose of the management plan. The requirements of EPA 2020 are considered to have generally been met.</p> <p>The information provided was also consistent with the observations made during the audit site inspection conducted on 18 June 2020.</p>	<p>Nil</p>

Audit Opinion	Requested Action
<p>The auditor considers that the measures outlined for interim management of the site has met the requirements of the <i>Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd Edition)</i> (EPA 2017) and the objectives of the audit.</p>	Nil
<p>Identified lead impacts in soil at the site and impacts that have migrated off-site via surface water and airborne dust pose risks to human health and ecological receptors.</p>	<p>The Lead Management Action Plan (Ramboll 2023) is required to be implemented until a long term remedial strategy is implemented.</p>

Please note that this interim advice does not constitute a Site Audit Statement or a Site Audit Report, but is provided to assist in the assessment and management of contamination issues at the site in regard to requirements of the site audit. The information provided herein should not be considered pre-emptive of the final audit conclusions, but rather represent the findings of the audit based on a preliminary review of available site information. Furthermore, the interim advice should not be regarded as approval of any proposed investigations or remedial activities, as any such approval is beyond the scope of an independent auditor.

Should you require clarification, please contact the undersigned on 0412 512 614 or by email alau@jbsg.com.au.

Yours sincerely:



Andrew Lau

NSW EPA Accredited Site Auditor

Accreditation Number 0503

JBS&G Australia Pty Ltd

Attachments:

- 1) Limitations
- 2) Site Plan

Attachment 1 – Limitations

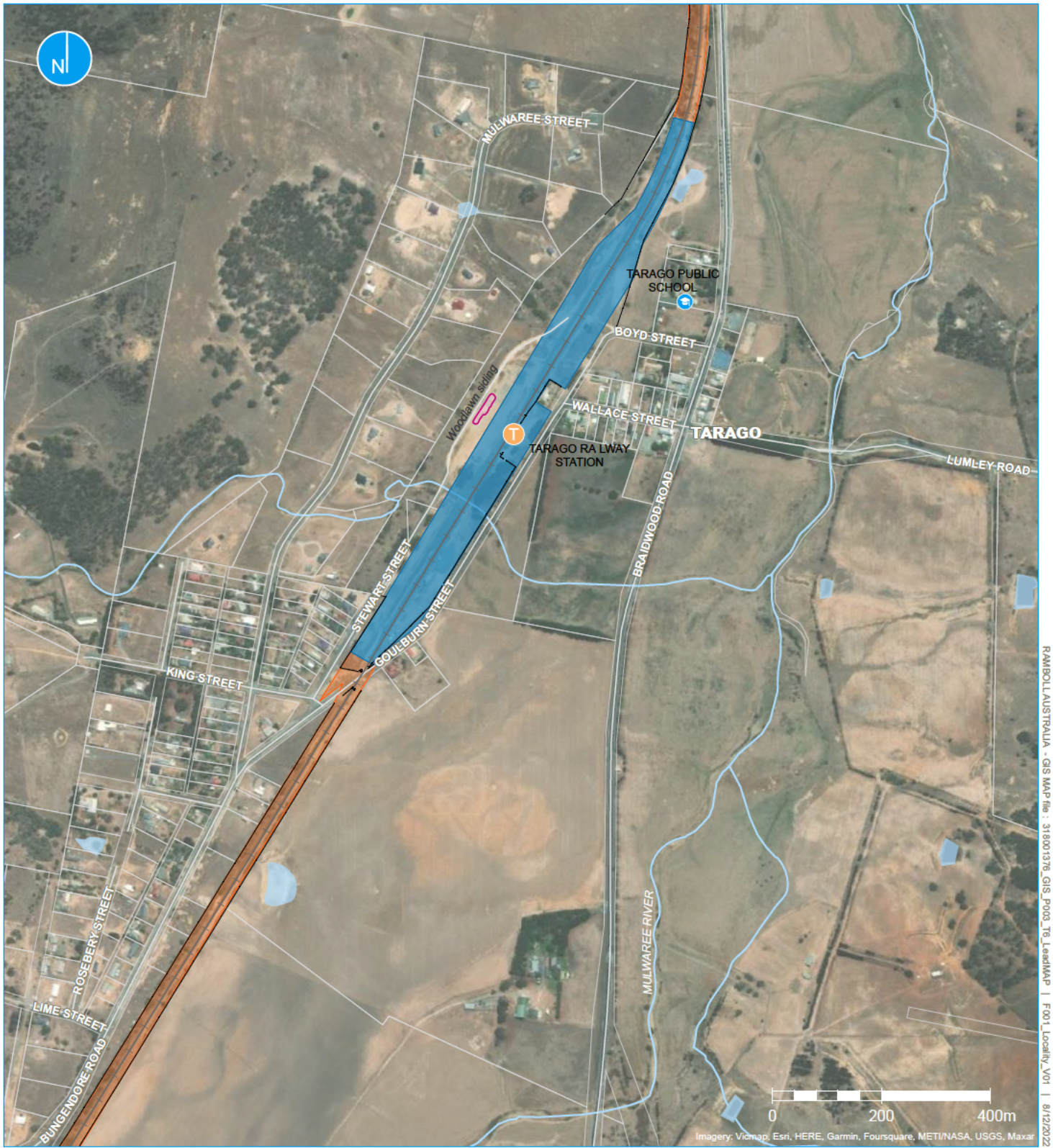
This audit was conducted with a reasonable level of scrutiny, care and diligence on behalf of the client for the purposes outlined in s.47 (1) of the *Contaminated Land Management Act 1997*. The data used to support the conclusions reached in this audit were obtained by other consultants and the limitations which apply to the consultant's report(s) apply equally to this audit report.

Every reasonable effort has been made to identify and obtain all relevant data, reports and other information that provide evidence about the condition of the site, and those that were held by the client and the client's consultants, or that were readily available. No liability can be accepted for unreported omissions, alterations or errors in the data collected and presented by other consultants. Accordingly, the data and information presented by others are taken and interpreted in good faith.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements. 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 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 audit are based on the information obtained at the time of the investigations.

Attachment 2 – Site Plan



RAMBOLL AUSTRALIA - GIS MAP file - 318001378_GIS_P003_Tg_LocalityMAP | F001_Locality_V01 | 8/12/2022

Legend

- Site boundary
- Rail corridor
- Approximate location of contaminated stockpile
- Rail corridor fence

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Figure 1 | Locality Plan