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Ref. 1508-2301-ISAA25

12 June 2026

Interim Site Audit Advice 25, RAP
UEF12: Hydrocarbon impacted pavement, Old Punt Road Intersection,
M12RT Southern Portion: Black Hill to Tomago

1.0 Nature of interim advice

To act as site auditor for this project, Gamuda Berhad & John Holland Pty Ltd (John Holland Gamuda Joint Venture) has engaged Ben Wackett, a New South Wales Environment Protection Authority (EPA) accredited Site Auditor, employed by Cavvanba Consulting. The final outcome of this engagement is to deliver a site audit statement (SAS) and associated site audit report (SAR), based on the objectives of the site audit.

This interim audit advice does not constitute a SAS or a SAR. It is provided to assist John Holland Gamuda Joint Venture in the assessment and management of contamination issues at the site. The information provided herein should not be considered pre-emptive of the final site audit conclusions, but rather represents the site auditor's opinion based on the current review of available site information.

Refer to Attachment 1 for information regarding the scope of site audits and associated limitations. Attachment 1 forms part of this interim site audit advice.

Attachment 2 is a record of the comments which documents and supports the review process undertaken at this stage of the Audit process (AR08).

2.0 Scope of audits

This interim audit advice is provided as an independent review to assist in the assessment and management of contamination issues at the site. The interim audit 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 review.

In NSW, the site assessment and audit process consists of:

(i) the contaminated land consultant, or other relevant party, *designs and implements* the site assessment and, where required, all remediation and validation activities to achieve the stated objectives; and

(ii) the site auditor *independently reviews* the works undertaken to ensure that they comply with current regulations, standards and guidelines, and that the site has been assessed, remediated and validated to a standard appropriate to the proposed landuse.

Therefore, the contaminated land consultant and other relevant parties should be satisfied that the work to be conducted conforms to all appropriate regulations, standards and guidelines and is suitable based on the site history and the proposed landuse.

3.0 Auditor review process

As part of the site audit, a review has been conducted of the following report:

- EnviroScience Solutions (11 June 2026) *Remedial Action Plan, Fill 18 – Hydrocarbon Impacted Material, Borrow Pit – Gate 16B, Pacific Highway, South Bound, Tomago NSW 2322* (Ref. 53006-R01-Rev04).

The report was reviewed, comments were provided and responded to as an Audit Review (AR08) which is provided in Attachment 2. All comments have been adequately addressed to facilitate the issue of the ISAA described below.

4.0 Interim Site Audit Advice – 1508-2301-ISAA25

The project is being undertaken in accordance with NSW Government, Department of Planning and Environment *Conditions of Approval for M1 Pacific Highway Extension to Raymond Terrace (SSI 7319)*. As part of the project, the involvement of NSW EPA accredited site auditor is required. Various conditions are relevant to this stage of work, primarily Condition E117(d), E118(a), E127 and E128 is relevant to the current stage of work, and states that the following is required:

> ***Contaminated sites***
>
> *E117 includes:*
> *The Site Auditor is to review all relevant documentation and provide a written opinion on the contamination risk and the appropriateness of the reports and any proposed management measures of the site, including (but not limited to):*
> *(d) Remedial Action Plans in Condition E127;*
>
> *E118*
> *Evidence that an EPA accredited Site Auditor has reviewed:*
> *(a) each of the plans and reports listed in Condition E117, and has issued an Interim Audit Advice or a relevant Site Audit Statement regarding the appropriateness of those plans or reports.*
>
> *E127*
> *Where remediation is required to make land suitable for the final intended land use, a Remedial Action Plan must be prepared and/or reviewed and approved by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.*
>
> *The Remedial Action Plan must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the CLM Act and must include measures to remediate the contamination at the site to ensure the site will be made suitable for the final intended land use.*

E128 [amended]*:*
Before commencing remediation, Interim Audit Advice or a Section B Site Audit Statement(s) must be prepared by an NSW EPA-accredited Site Auditor that certifies that the Remedial Action Plan is appropriate and that the site can be made suitable for the proposed use. The Remedial Action Plan must be implemented and any changes to the Remedial Action Plan must be approved in writing by the NSW EPA accredited Site Auditor.

This interim site audit advice has been prepared to address E128 and is based on the outcome of the review recorded in AR08.

The scope of the RAP includes several areas where different aspects of the remediation will be undertaken, being:
- the source area, where the contaminated material was excavated from; and
- a stockpile and treatment area, where the material will undergo processing for immobilisation of contamination; and
- two areas where treated material will be permanently placed within the road corridor, described as Area 1 and Area 2.

The opinion regarding site suitability in the RAP and this ISAA refers to the proposed placement of the treated material. It does not include an opinion regarding site suitability of the source area or the stockpile/treatment area.

1. The Auditor has reviewed the Remedial Action Plan. The evidence of review is included in the Attachment 2 (AR08).

2. The Remedial Action Plan has been prepared by a consultant certified under the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)).

3. The Remedial Action Plan has been prepared in accordance with relevant guidelines made or approved by the EPA under s105 of the Contaminated Land Management Act 1997 (CLM Act), is appropriate, and includes measures to remediate the contamination at the site to ensure the site will be made suitable for the final intended land use.

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Please do not hesitate to contact the undersigned on (02) 6685-7811 if you require additional information or clarification.

Yours sincerely
Cavvanba Consulting Pty Ltd

Ben Wackett
Accredited Site Auditor (1508)

Attachment 1 – Scope and limitations to site audits

Scope of audits

In NSW, the site assessment and audit process consists of:

(i) the contaminated land consultant, or other relevant party, *designs and conducts* the site assessment and, where required, all remediation and validation activities to achieve the stated objectives; and

(ii) the site auditor *independently and at arm's length reviews* the works undertaken to ensure that they comply with current regulations, standards and guidelines, and that the site has been assessed, remediated and validated to a standard appropriate to the proposed landuse.

Therefore, the contaminated land consultant and other relevant parties should be satisfied that the work to be conducted conforms to all appropriate regulations, standards and guidelines and is suitable based on the site history and the proposed landuse.

Whereas interim site audit advice is provided to assist in the assessment and management of contamination issues at a site, the interim site audit advice should not be regarded as 'approval' of any proposed investigations or remedial activities, or any assessment reports, management plans and the like, or actions proposed therein. 'Approval' is inconsistent with the concept of a site audit, that is an independent third party review, and as such approval is beyond the scope of a site audit.

Rather, where interim site audit advices describe such documents as appropriate or similar, this means that the site audit is in general agreement that the document fulfils the intended purpose, consistent with the scope of site audits described above. 'Approval' of reports or plans is by definition a statutory function, and the *Contaminated Land Management (CLM) Act* 1997 does not provide accredited site auditors authorisation for statutory functions.

Limitations to site audits

This site audit relates only to those matters relevant to the CLM Act, which describes that "The general object of this Act is to establish a process for investigating and (where appropriate) remediating land areas where contamination presents a significant risk of harm to human health or some other aspect of the environment".

Contaminated land site audits do not seek to provide an opinion regarding:
- other aspects of the environment not related to site contamination; or
- hazardous building materials in buildings or structures; or
- to the suitability of the site in regard to landuse planning and legal use of the land; or
- the occupational health and safety legislation; or
- the suitability of any engineering design.

Accordingly, reviews of such information are only in relation to the contaminated land aspects of any projects or sites. If specialist technical review of such documents is required, these should be obtained by appropriate specialist.

By definition, site auditing involves the review and critique of consultants' and contractors' work, including, amongst others, site histories, site surveys, subsurface investigations, chemical and physical analyses, and risk assessments and modelling. Accordingly, Cavvanba relies on the experience, expertise and integrity of the relevant organisations. The information sources referenced have been used to determine site history and local subsurface conditions. While Cavvanba takes reasonable care to avoid reliance on data and information that is inaccurate or unsuitable, Cavvanba is not able to verify the accuracy or completeness of all information and data made available.

Sampling and chemical analysis of environmental media are 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 and site history, not on sampling and analysis of all media at all locations for all potential contaminants.

Limited environmental sampling and laboratory analyses were undertaken as part of the investigations reviewed by Cavvanba, as described herein. Ground conditions between sampling locations may vary, and this should be considered when extrapolating between sampling points. Except at each sampling point, the nature, extent and concentration of contamination is inferred only. Furthermore, the test methods used to characterise the contamination at each sampling point are subject to limitations and provide only an approximation of the contaminant concentrations.

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 site audit are based on the available information at the time of the investigations.

As environmental sampling is based on achieving suitable sampling densities, rather than sampling all media at all locations, and analysis is based on site histories and likely contaminants of concern, rather than analysis of all media at all locations for all potential contaminants, the absence of any identified hazardous or toxic materials at the site should not be interpreted as a warranty or guarantee that such materials do not exist at the site. Therefore, future work at the site which involves subsurface excavation should be conducted based on appropriate management plans. These should include, *inter alia*, environmental management plans, including unexpected findings protocols, hazardous building materials management plans, and occupational health and safety plans.

If additional certainty is required in addition to the requirements of the site audit, then additional site history information should be obtained, or additional exploration and sampling and analysis should be conducted. This decision should be made by the user of this information based on an appropriate risk management process, and the user should commission additional services if required.

AR08 Auditor review RAP Fill 18 Hydrocarbon

Site:	M12RT Southern Portion: Black Hill to Tomago (construction corridor)	Accredited Auditor:	Ben Wackett, Cavvanba Consulting
Proposed Development:	Highway	Date of Review:	07/04/2026 - 12/06/2026
Proposed Land Use:	Highway	Scope of review:	Review comments on UXF12 Draft Remedial Action Plan – Fill 18 – hydrocarbon impacted material
Client:	John Holland Gamuda Joint Venture	Date of Auditor site inspection:	N/A
Nature of interim advice	To act as site auditor for this project, John Holland Gamuda Hoint Venture has engaged Ben Wackett, a New South Wales Environment Protection Authority (EPA) accredited site auditor, employed by Cavvanba Consulting Pty Ltd (Cavvanba). The final outcome of this engagement is to deliver a site audit statement (SAS) and associated site audit report (SAR), based on the objectives of the site audit. This audit review is interim advice and does not constitute a SAS or SAR. It is provided to assist John Holland Gamuda Joint Venture in the assessment and management of contamination issues at the site. The information provided herein should not be considered pre-emptive of the final site audit conclusions, but rather represents the site auditor's opinion based on the current review of available site information. The auditor comments appear in the table below, and it is expected that the consultant will address each comment. Refer to Attachment 1 for information regarding the scope of site audits and associated limitations. Attachment 1 forms part of this audit review.		
Audited Reports:	EnviroScience Solutions (March 2026) *Draft Remedial Action Plan, Fill 18 – Hydrocarbon impacted material, Borrow Pit – Gate 16B, Pacific Highway, South Bound, Tomago NSW 2322* (Ref. 50985_R01-Rev02). Rev03 dated 15 May 2026, Rev04 dated 11 June 2026.		
Consultant:	EnviroScience Solutions	Audit Number:	1508-2301

Comment No.	Auditor comment (07/04/2026)	Consultant response (25/05/2026)	Auditor response (02/06/2026)	Consultant response (9/06/2026)	Auditor response (12/06/2026)
1	*Overarching comment:* The RAP and conceptual site model should focus on the placement areas. There are multiple references to excavations and stockpiles, however it is unclear whether it is in regard to the source area, the site where treatment will take place, or the proposed placement areas.	CSM required for treatment area & placement areas. CSM for treatment area can be very basic – info is in the site description section – biggest potential risk is surface/groundwater impacts – this is addressed through the lined bunded area with separate sump to capture water before leaving site. Section 7.2 and Section 9 have been updated to distinguish between the source area, storage/treatment area and proposed placement areas. The CSM has also been revised to focus on the post-treatment placement scenario.	Closed.	-	-
2	*Section 2:* The preferred option in the remedial options assessment was on-site encapsulation. A revisit of the options assessment should be included to justify changes to the preferred remedial option.	Section 11 has been updated to reflect the revised preferred remediation option. The RAP now notes that chemical treatment/immobilisation was selected following further consultation with TfNSW and review of project constraints.	Closed	-	-
3	*Section 7.2:* The site description should include detailed information of the relevant sites, and include referenced site location plans for: – the source site; – the storage area; – each of the proposed placement areas; and	Reference plans created – source site, storage site and overarching Updated site description for source site, storage site and placement sites into word doc. Section 7.2 has been updated to provide separate	Closed	-	-

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	– detail of the treatment area (if different). The detail should be sufficient to satisfy the relevant attributes of a conceptual site model (CSM) for each area, and a feasibility study (refer to comment 10 below) for the proposed placement areas, including the physical characteristics such as depth, coverings or any engineering aspects.	descriptions for the source area, storage/treatment area and proposed placement areas. Final placement details will be confirmed prior to placement and documented in the validation report.			
4	*Section 7.2.5:* If available, please include an appraisal of hydrocarbon contamination in groundwater in the vicinity of the source. This would help support aspects of the conceptual site models.	Section 7.2.6 and the CSM have been updated to include a summary of available groundwater hydrocarbon data. No exceedances of the adopted groundwater criteria were identified, although leaching to groundwater has been retained as a potential pathway.	Closed	-	-
5	*Section 8.2:* It is not clear why a summary of SP1 has been included as a previous report if the material has been assessed as being suitable for reuse and not being relevant to the RAP. It is, however understood that additional and similar material will be generated for disposal in accordance with this RAP. Please include any relevant information regarding	Ok noted. Removed.	Closed	-	-

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	additional material to be included in this RAP which has yet to be provided for review. It is also assumed that the reference to ROA in this section is a typo.				
6	*Section 9:* Whilst it is acknowledged that a CSM of the source site will provide valuable information regarding the likely long term conditions upon its placement in a different area, a CSM should be developed for the scenario where the material will be placed.	Section 9 has been updated so the CSM focuses on the proposed final placement scenario for the treated material. Final placement details will be confirmed by the project team and documented in the validation report.	Open: This section and several others, discuss that there is important information to be obtained or confirmed regarding Area 1 and/or Area 2 prior to the placement of treated material. Whilst it is understood that those details could be confirmed during the same period that the treatment is taking place, the lack of confirmation of placement area suitability is a significant uncertainty. This uncertainty must be better described in the RAP. It is recommended that a hold point is provided for stakeholders to be consulted for decision making and/or contingencies.	7.2.5 - Updated with details from the drainage design – vegetated swales and bioswales prevent pathway to surface waters. Surface water drainage and bioswales have been designed to be above the groundwater table. Design drawing provided separately for reference. Height of the base of the placement areas above the groundwater table and risks for pathways has been discussed. 7.2 & 7.2.4 The location will include a max 2:1 batter with a 7.6% fall, 90% engineering compaction, terraced as per R44 into batter below tree level and designed drainage channels will be maintained as per existing design. The location will include a	Closed. Additional groundwater information included is sufficient.

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			Example sections where additional information requirements are discussed: 7.2: discusses design. 7.2.4: discusses final levels/landforms. 7.2.5: discusses preferential pathways. 7.2.6: discusses groundwater conditions and depths. 11.3: discusses constraints. 14.12.2: discusses revegetation DQO's Step 3: should include the missing information to be confirmed as inputs. DQOs Step 7: discusses monitoring wells. Are they suitably located? 15.5: discusses monitoring well locations.	max 2:1 batter with a 7.6% fall, 90% engineering compaction, terraced as per R44 into batter below tree level and designed drainage channels will be maintained as per existing design. Once placed the area will be topsoiled with 300mm cover then hydromulched with a grass mix. 7.2.6 – section has been updated to included current groundwater monitoring levels at well locations on either side of the placement areas. 11.3 – Minor update 14.12.3 – revegetation has been moved to 14.11.6 and a new section created. DQO's Step 3: addressed in responses above. DQOs Step 7: Existing RZM monitoring wells M-PZ-324A and M-PZ-324B will be used for downgradient groundwater monitoring. Based on the inferred	

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				groundwater flow direction to the north-west and the location of the wells north/north-west of the proposed placement areas, the wells are considered suitably located. The monitoring well locations are shown on Figure 5 in Appendix A. 15.5: Groundwater monitoring will utilise the Existing RZM monitoring wells M-PZ-324A and M-PZ-324B will be used to monitor groundwater quality downgradient of the proposed placement area. Based on the current proposed placement areas, the inferred groundwater flow direction to the north-west, and the location of M-PZ-324A and M-PZ-324B north/north-west of the proposed placement areas, the wells are considered suitably located for downgradient groundwater monitoring. The monitoring well locations are shown on Figure 5, Appendix A.	

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7	*Section 9.1.2:* This section suggests that groundwater has been impacted at the source area. It is not clear if this is correct. Refer to comment 4 above as additional groundwater information would help support the proposed remediation.	Section 9.1.2 has been amended to clarify that groundwater impact has not been confirmed at the source area. Groundwater leaching and migration have been retained in the CSM as potential pathways.	Closed.	-	-
8	*Section 9.6: Sources to sensitive receptors:* It is unclear whether this section is describing the source site, the temporary stockpile area, or the placement areas. The plausibility of each link is not described.	Section 9.6 has been revised to clarify that the source-pathway-receptor assessment relates to the proposed placement scenario. The plausibility of each linkage has also been described.	Closed.	-	-
9	*Section 11: Remediation Options Appraisal:* The following simple description is taken from NRF (2019) *Guideline on Performing Remediation Options Assessment*. The remediation option being considered should be very clear how each aspect is being addressed: "*When considering the remediation options for the active exposure pathways in the CSM, various remediation options can be considered to achieve the following:*	Section 11 has been updated to describe the selected remediation approach with reference to the NRF framework, including treatment of the source and management of relevant exposure and migration pathways.	Closed.	-	-

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	– *treat the source – to remove the contaminant, either fully or partially* – *break the pathway – to mitigate the risk to the receptor(s) from source(s), or* – *control the receptor to avoid exposure – to mitigate the potential for the exposure scenario to occur."*				
10	*Section 11.2: T*he site-specific constraints and therefore objectives of the remediation include *"Protection of the drinking water catchment given the proximity to groundwater/surface water and the Tomago Sandbeds Catchment area".* It is not clear how this will be taken into consideration for ASLP criteria which appears to be based on ecological aspects only.	Section 11.2 and Section 12.1.2 have been updated to clarify the ASLP assessment approach. ASLP results will be compared directly against the adopted water-quality screening criteria, with no dilution factor applied.	Open. Consider Multiple Extraction Procedure (MEP) as an assessment/validation tool.	-	Closed.
11	*Section 11.3:* Reference is included to the *NSW EPA immobilisation technical note for mixing process equipment for treatment of contaminated soil and sludge waste*. It should be noted that this document is primarily for waste purposes, reference should be made to the National Remediation Framework.	Section 11.3 has been updated to refer to the NRF as the primary guidance for chemical immobilisation/solidification. The NSW EPA technical note has been retained only for process equipment considerations.	Closed.	-	-

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12	*Section 11.3:* Reference should be made to *NRF (2018) Technology Guide: Chemical immobilisation and solidification.* Refer specifically to Section 3 of the document. A feasibility assessment should be included for immobilisation taking into account considerations such as: – Physical properties; – Chemical composition and type of contaminant; – Maximum allowable concentrations; – Groundwater conditions; – Depth, distribution and volume of material to be treated; – Regulatory requirements; and – Approvals. The section should also be updated to acknowledge that the pilot trials have been undertaken, however there is also additional material yet to be excavated. *CRC CARE 2017, Risk-based management and remediation guidance for benzo(a)pyrene, CRC CARE Technical Report no. 39* is also an appropriate and relevant source of information.	Section 11.3 has been updated to reference the NRF chemical immobilisation guidance and CRC CARE Technical Report no. 39. A feasibility assessment has also been added, including consideration of material properties, contaminant type, groundwater conditions, volume, regulatory requirements and approvals.	Refer to Comment 6.	-	-

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13	*Section 11.3.1: Pilot Trials:* Include the Enviropacific pilot trail as an attachment and provide a discussion of the outcome of the trial based on Section 4.2 of *NRF (2018) Technology Guide: Chemical immobilisation and solidification.*	Section 11.3.1 has been updated to summarise the Enviropacific pilot trial outcomes and the preferred treatment approach. The pilot trial report has also been included as an appendix to the RAP.	Closed.	-	-
14	*Section 11.3.1: Pilot Trials:* The concentrations of contaminants in the samples used for the pilot trial were significantly lower than those in the original sampling. A discussion should be provided regarding the implication of this. The maximum B(a)P TEQ concentration modelled was 17 mg/kg compared to 1,400 mg/kg for example.	Section 11.3.1 has been updated to discuss the lower benzo(a)pyrene concentrations in the pilot trial material compared with some site characterisation samples. The section also notes that this limitation will be managed through full-scale batch validation testing. Enviropacific Response - The pilot and laboratory trials were undertaken using material with lower solid-phase benzo(a)pyrene (BaP) concentrations than those identified in some original site characterisation samples, including discrete coal-tar-impacted materials. This difference is acknowledged. Comparison of ASLP leachability results indicates that BaP leachate concentrations are of a similar order of magnitude in both the original site samples and the baseline laboratory trial samples. In the original site	Refer to Comment 10.	-	-

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		dataset, BaP leachate concentrations of up to approximately 1.2 mg/L were reported (e.g. sample MC209210_S), while the baseline laboratory trial samples exhibited BaP leachate concentrations of up to approximately 0.75 mg/L. The relatively limited difference between these values indicates that BaP leachability does not increase proportionally with increasing solid-phase BaP concentration. Although the laboratory trial samples contain lower absolute BaP mass than some site characterisation samples, the observed BaP leachability falls within a comparable range. This indicates that the laboratory trial captures the dominant BaP mobility behaviour relevant to the site, notwithstanding differences in bulk contaminant concentrations. It is recognised that the laboratory trial does not directly assess treatment performance for the most elevated solid-phase BaP hotspot materials. However, the BaP leachability data demonstrate that the laboratory trial material is representative of site-relevant			

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		BaP mobility and therefore suitable for informing treatment feasibility in immobilisation remediation			
15	*Section 12.1.2: Assessment of Australian Standard Leaching Procedure (ASLP) results:* This section includes a discussion regarding the adoption of multiple level of protection for species (i.e. 80% vs 95%). Further discussion should be provided to justify the application of less stringent criteria (if this is considered to be appropriate), given the site-specific constraints detailed in Section 11.2.	Section 12.1.2 has been amended to clarify that ASLP results will be assessed against the adopted 95 percent species protection criteria. Less stringent species protection levels have not been adopted as the primary ASLP screening criteria. No dilution factor has been applied.	Closed.	-	-
16	*Section 12.1.2: Assessment of Australian Standard Leaching Procedure (ASLP) results:* Should a dilution factor be included for leachate? If so, this needs to be consistent with the CSM to demonstrate it is appropriate.	Section 12.1.2 has been updated to clarify that no dilution factor has been adopted for ASLP assessment. Results will be compared directly against the adopted water-quality screening criteria.	Closed	-	-
17	*Section 13.3:* Please present the analytical results more succinctly? Explain how representative they are of the stockpiled material.	Section 13.3 has been revised to provide a more concise summary of the analytical results, including the key contaminants, maximum reported concentrations, magnitude of exceedances and representativeness of the dataset.	Closed.	-	-

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18	*Section 13.5:* More detail should be provided of the magnitude of the ASLP exceedances of criteria identified during the previous assessment. No analytical tables were attached to the draft document.	Section 13.5 has been updated to summarise the ASLP exceedances, including maximum reported concentrations and approximate exceedance factors. The ASLP results tables have also been included in Appendix A.	Closed	-	-
19	*Section 14:* A list of relevant stakeholders should be included for the project for remediation approval purposes, and a proposed strategy for discussion.	Section 14 has been updated to include a preliminary stakeholder list and consultation strategy for the remediation works. The stakeholder list will be reviewed and updated by JHGJV/TfNSW prior to implementation, where required.	Closed	-	-
20	*Section 15:* A discussion should be provided regarding validation of groundwater for the proposed placement location. *NRF (2018) Technology Guide: Chemical immobilisation and solidification* Section 5 contains guidance on validation requirements and states: *Validation of CIS generally consists of two main parts:* – *An assessment of the treated material to*	Section 15 has been updated to include groundwater monitoring for the proposed placement area. Existing RZM wells M-PZ-324A and M-PZ-324B will be used where suitable, with monitoring to continue post-construction as part of the ongoing groundwater monitoring program.	Refer Comment 6.	-	Closed.

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	determine the leachability of contaminants; and – *If treated material is to be left on site, monitoring of down-gradient receptors to assess whether remedial criteria for groundwater and/or surface water have been met.*				
21	*Section 15: Step 7:* Based on the variability of contaminants in the stockpiled soil, is a validation of 1/250 m3 considered to be sufficient. Section 11.3 also states a validation frequency of 1/500 m^3, ensure consistency.	Section 11.3 and Section 15.4 have been updated to clarify the validation sampling frequency. Initial validation will be undertaken at 1 sample per 250 m^3, with potential reduction to 1 sample per 500 m^3 subject to review of compliant results and agreement with JHGJV, TfNSW and the Site Auditor.	Refer comment 10	-	Closed.
22	*Figures:* A detailed figure should be provided for each of the relevant site areas, e.g: – source areas – stockpile areas – proposed placement locations – treatment area.	Figures have been updated (provided by client) to show the source area, storage/stockpile area, proposed treatment area and proposed placement areas. The figures are included in Appendix – Figures.	Closed	-	-

Attachment 1 – Scope and limitations to site audits

Scope of audits

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In NSW, the site assessment and audit process consists of:

(i) the contaminated land consultant, or other relevant party, *designs and implements* the site assessment and, where required, all remediation and validation activities to achieve the stated objectives; and

(ii) the site auditor *independently reviews* the works undertaken to ensure that they comply with current regulations, standards and guidelines, and that the site has been assessed, remediated and validated to a standard appropriate to the proposed landuse.

Therefore, the contaminated land consultant and other relevant parties should be satisfied that the work to be conducted conforms to all appropriate regulations, standards and guidelines and is suitable based on the site history and the proposed landuse.

Provision of interim site audit advice addressing assessment reports, management plans and the like does not constitute approval of these documents or actions proposed therein. 'Approval' is inconsistent with the concept of a site audit, that is an independent third party review.

Rather, where interim site audit advices describe such documents as appropriate or similar, this means that the site audit is in general agreement that the document fulfils the intended purpose, consistent with the scope of site audits described above. 'Approval' of reports or plans is by definition a statutory function, and the *Contaminated Land Management (CLM) Act* 1997 does not provide accredited site auditors authorisation for statutory functions.

Limitations to site audits

This site audit relates only to those matters relevant to the CLM Act, which describes that "The general object of this Act is to establish a process for investigating and (where appropriate) remediating land areas where contamination presents a significant risk of harm to human health or some other aspect of the environment".

Contaminated land site audits do not seek to provide an opinion regarding:
- other aspects of the environment not related to site contamination; or
- to the suitability of the site in regard to landuse planning and legal use of the land; or
- the occupational health and safety legislation; or
- the suitability of any engineering design.

Accordingly, reviews of such information are only in relation to the contaminated land aspects of any projects or sites. If specialist technical review of such documents is required, these should be obtained by appropriate specialist.

By definition, site auditing involves the review and critique of consultants' and contractors' work, including, amongst others, site histories, site surveys, subsurface investigations, chemical and physical analyses, and risk assessments and modelling. Accordingly, Cavvanba relies on the experience, expertise and integrity of the relevant organisations. The information sources referenced have been used to determine site history and local subsurface conditions. While Cavvanba takes reasonable care to avoid reliance on data and information that is inaccurate or unsuitable, Cavvanba is not able to verify the accuracy or completeness of all information and data made available.

Sampling and chemical analysis of environmental media are 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 and site history, not on sampling and analysis of all media at all locations for all potential contaminants.
Limited environmental sampling and laboratory analyses were undertaken as part of the investigations reviewed by Cavvanba, as described herein. Ground conditions between sampling locations may vary, and this should be considered when extrapolating between sampling points. Except at each sampling point, the nature, extent and concentration of contamination is inferred only. Furthermore, the test methods used to characterise the contamination at each sampling point are subject to limitations and provide only an approximation of the contaminant concentrations. 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 site audit are based on the available information at the time of the investigations.

As environmental sampling is based on achieving suitable sampling densities, rather than sampling all media at all locations, and analysis is based on site histories and likely contaminants of concern, rather than analysis of all media at all locations for all potential contaminants, the absence of any identified hazardous or toxic materials at the site should not be interpreted as a warranty or guarantee that such materials do not exist at the site. Therefore, future work at the site which involves subsurface excavation should be conducted based on appropriate management plans. These should include, *inter alia*, environmental management plans, including unexpected findings protocols, hazardous building materials management plans, and occupational health and safety plans.