12 November 2019

Katherine Daunt
Design Director
dwp Australia Pty Ltd
16 Telford Street
Newcastle NSW 2300

Our ref: 12519246
Your ref: SSD-9787

c.c. Paul McMurray (City of Newcastle), Gary Fielding (City Plan)

Dear Katherine

Newcastle Courthouse Redevelopment - Nihon University - Site Audit Interim Advice #1 - Review of Concept RAP

1 Introduction

Ian Gregson of GHD has been engaged to undertake a site audit under the provisions of the Contaminated Land Management Act (CLM Act) 1997 in relation to assessment and remediation of contamination at the proposed Nihon University site (former Newcastle Courthouse), located at 9 Church Street Newcastle (the site) and identified as Lot 1 DP 1199904.

The purpose of this Interim Advice is to provide the Auditor's opinion of the appropriateness of the proposed remediation strategy for the site, based on the information available at this time. These comments are provided on the basis of a brief site inspection undertaken by the Auditor on 8 November 2019 and from review of the following reports relating to the subject property:

- Cardno 2019, *Conceptual Remediation Action Plan, 9 Church Street, Newcastle NSW*, Cardo (NSW/ACT) Pty Ltd, 28 May 2019
- Coffey 2012, *Phase 1 Environmental Site Assessment Newcastle Courthouse and Former Newcastle East Public School*, Coffey Environments, 25 July 2012
- Prensa 2016, *Detailed Site Investigation, 9 Church St, Newcastle, NSW 2300*, Prensa Pty Ltd, October 2016

As part of developing an understanding of the site, the proposed development and the remediation strategy, the Auditor has also referred to the following documents, although these are more peripheral to potential contamination issues at the site, and hence detailed review or comment on these documents has not been provided as part of the audit review:

- Napier & Blakely 2008, *The Newcastle Courthouse, Church Street, Newcastle NSW, Asbestos Materials Report*, Napier & Blakely Pty Ltd, August 2008
- Cardno 2018, *Report on Geotechnical Investigation, Newcastle Courthouse Redevelopment*, Cardo (NSW/ACT) Pty Ltd, 20 December 2018

Please note that this communication has been provided as Interim Advice only, as part of the audit process. The advice does not constitute a site audit report or site audit statement under the provisions of the CLM Act, and does not pre-empt the conclusions, which will be drawn at the end of the audit process. A site audit report and site audit statement will be issued when the audit process has been completed.

This Interim Advice relates solely to the contamination at the site, and is not intended to provide any opinions regarding the compliance or status of other aspects of the proposed site redevelopment.

The opinions and recommendations offered in this Interim Advice are subject to the attached Limitations.

2 Background

I understand a State Significant Development Application (SSD-9787) has been submitted to develop the former Newcastle Courthouse site, being Lot 1 DP 1199904, into a new university campus. The proposed development will involve the demolition of two buildings on the site, changing the original courthouse building to an educational establishment, and construction of two new 4-storey buildings.

Limited contamination investigations have been undertaken at the site (restricted to date due to the presence of buildings and hardstand over most of the site), and a conceptual Remedial Action Plan (cRAP) has been prepared. A hazardous materials investigation has also been carried out, which may be relevant to site contamination issues. These comprise the documents listed in Section 1 above.

Comments in relation to the proposed development were provided by the EPA (letter dated 19 June 2019) and City of Newcastle (letter dated 6 June 2019). A response to comments on contamination issues was provided by Cardno, dated 9 July 2019, with further response to the Department of Planning, Industry & Environment (DPIE) provided by City Plan dated 19 September 2019.

The City of Newcastle (Council) provided further comment on the proposed development by letter dated 10 October 2019. In relation to contamination, Council advised that the 9 July 2019 response from Cardno does not fully address Council's concerns regarding site contamination. Key issues identified by Council in this letter included the following:

- A detailed contamination assessment (in accordance with relevant guidelines) has not been completed, and there is no detailed RAP which outlines a specific remediation strategy.
- It is not known if the proposed future RAP to be developed after further detailed assessment would be Category 1 or Category 2 remediation. On-site containment would be Category 1 remediation.
- Council acknowledged the available information indicates contamination risk is low, and the involvement of a site auditor would help ensure appropriate standards are complied with; however this does not absolve a determining authority from the need to properly consider contamination, and planning complexities may arise if onsite capping of contamination is required.

Based on these concerns, Council considered it appropriate for the applicant to be required, prior to determination of the application, to provide interim site auditor advice confirming the adequacy of the submitted contaminated land information and confirming land use suitability. Council also recommended that consideration be made in respect to the option of a staged approval process to provide the consent authority an opportunity to assess further detailed contaminated land information and a specific remedial action plan once this can be developed by the applicant.

A Schedule of Recommended Conditions was attached to Council's letter of 10 October 2019, however none of these conditions related to site contamination.

Subsequent to the above letter, DPIE issued a letter to Nihon Daigaku Australia Newcastle Pty Ltd dated 15/10/2019, with a request to submit additional information, including the following in relation to site contamination:

- *Provide interim site auditor advice to confirm that the proposed approach regarding contamination is appropriate for the site, and to confirm that the site can be made suitable for the proposed use*.

This Interim Advice is intended to meet the above requirement.

3 Review methodology

I have reviewed the available contamination assessment and management reports in the context of guidelines made or approved by the NSW EPA under the provisions of the CLM Act, including the following:

- NEPC 2013, *National Environment Management (Assessment of Site Contamination) Measure 1999*
- NSW EPA 1995, *Sampling Design Guidelines*
- NSW EPA 2017, *Guidelines for the NSW Site Auditor Scheme*
- NSW OEH 2011, *Guidelines for Consultants Reporting on Contaminated Sites*

My opinion on whether the proposed approach regarding contamination is appropriate for the site, and whether the site can be made suitable for the proposed use is based on the above guidelines with consideration of the following factors primarily influencing these opinions:

- What is the scope of investigations that has been carried out to date?
- Is the information considered reliable and consistent with relevant guidelines?
- Is the information sufficient to predict the likely remediation requirements?
- Does the cRAP demonstrate an appropriate remediation approach based on the contamination issues likely to be present at the site?
- Does the cRAP incorporate sufficient methodology to address current uncertainties and data gaps?

4 Review comments

Table 1 (**Attachment A**) provides a summary of the information reviewed, which is the primary basis for the Auditor's opinions. Review and comment on the adequacy of the cRAP is presented in Table 2 and Table 3 in **Attachment B**. Key comments from review, and recommendations for issues that need to be further addressed are listed below.

1. The combined assessments are relatively comprehensive as far as desktop based review, although a dangerous goods search has not been undertaken, nor have Council historical records been obtained relating to fuel / oil storage and use at the police station adjoining the site to the east.
2. Field investigations have been limited to date, based on buildings occupying most of the site. Investigations which have been carried out are considered reliable and consistent with relevant guidelines. The Cardno 2018 Geotechnical Assessment contained some useful information that was not documented in the cRAP.
3. Cardno 2019 notes the cRAP was prepared due to a requirement for lodgement with the DA prior to completion of a detailed site assessment, and hence details the sampling and investigation requirements of the DSI in addition to potential remedial options and procedures to be implemented based on the findings of the DSI when available.
4. Potential contamination sources described in the cRAP (as a basis for further investigations and potential remediation requirements) have not taken into account possible on-site (a potential breather point observed in the northeast portion of the site in driveway pavement) or off-site (police station to the east) fuel storage activities, and consequently a potential for impact to groundwater or vapour intrusion risks. The potential impacts from building demolition have not been fully considered, although the cRAP includes relatively comprehensive procedures for management of asbestos contamination.

5. The cRAP generally meets the requirements of OEH 2011 *Guidelines for Consultants Reporting on Contaminated Sites*, and the proposed remediation strategies are considered reasonable to address currently identified contamination, but further detail will be required to address all relevant aspects of EPA guidelines and policy, potential Council requirements and contingencies if there is groundwater impact or vapour risk. The Auditor considers it reasonably that these deficiencies be addressed in a detailed RAP, to be prepared on the basis of the proposed further investigations (when completed).
6. An updated conceptual site model (CSM) and detailed sampling, analysis and quality plan (SAQP) should be prepared prior to undertaking the proposed detailed investigations, taking into account the issues that have not been adequately addressed to date.

5 Conclusions and recommendations

5.1 Conclusions

DPIE request: *Provide interim site auditor advice to confirm that the proposed approach regarding contamination is appropriate for the site*

The Auditor considers the proposed approach regarding contamination documented in the conceptual RAP (cRAP) (Cardno 2019) is appropriate for the site, on the basis of the following considerations:

- The Auditor considers the proposed approach of undertaking further investigations and preparing a detailed RAP on the basis of those investigations is appropriate, given current constraints to comprehensive investigation of the site (due to buildings occupying most of the site), and Development Application requirements to have remediation plans and contingencies in place at the time of application. The Cardno cRAP is consistent with the recommendations of previous investigations, and is generally considered appropriate to address contamination identified to date. While it does not fully consider all potential contamination issues, it acknowledges unexpected issues may arise. The approach (a detailed RAP to be prepared on the basis of the proposed further investigations) allows for these deficiencies to be addressed.

DPIE request: *confirm that the site can be made suitable for the proposed use*

The Auditor considers the site can be made suitable for the proposed use by implementation of the cRAP (including the proposed detailed investigations and subsequent detailed RAP), on the following basis:

- Investigations to date have been limited due to site access constraints, primarily the presence of buildings over most of the site. The Auditor considers the potential for significant contamination on the site is low, based on historical review and site investigations to date, although the potential for impacts from fuel storage either on site or on adjacent land (the police station) has not been adequately considered. Proposed geotechnical investigations offer the opportunity to further investigate this potential, as well as the investigations that are proposed in the cRAP. While required remediation details are not yet fully known (pending the completion of detailed investigations), the approach described above provides for developing an appropriate detailed RAP, including update of the recommendations in the cRAP that are based on currently available data. The Auditor considers remediation methodology is readily available to address fuel impacts (if present) without compromising suitability of the site for the proposed development, including engineering design if necessary to address vapour intrusion risks (if any). These details can be provided in a detailed RAP following the proposed additional investigations.

5.2 Recommendations

The Auditor considers demolition works have the potential to impact the site condition, and investigations and validation following demolition should further consider any such impacts. Demolition (including any prior hazardous materials removal) should be managed to minimise the potential impacts to site contamination.

The Auditor suggests conditions of consent requiring the following could address Council's concerns (discussed in Section 2 above):

- A detailed site investigation (DSI) to be carried out following demolition works, to be reviewed by an accredited site auditor. (The Auditor recommends an updated CSM and detailed SAQP be prepared for the additional investigations, which should be reviewed by the site auditor; however the Auditor does not consider it necessary to make this a condition of consent. The CSM and SAQP should address the comments and recommendations provided in this Interim Advice).
- If the DSI concludes remediation is required, a detailed RAP to be prepared on the basis of the DSI, reviewed by an accredited site auditor and certified by way of Interim Advice that the detailed RAP is appropriate and the site can be made suitable for the proposed development by implementation of the detailed RAP. Such Interim Advice to be provided before issue of a Construction Certificate for the proposed development. (This could be staged, if eastern and western portions of the site are not demolished, investigated and developed at the same time).
- Any remediation works required are to be carried out in accordance with the detailed RAP and with a construction environmental management plan (CEMP), to be prepared in accordance with Council guidelines.
- A validation report to be prepared following completion of remediation, and reviewed by an accredited site auditor. A site audit report and site audit statement certifying the site is suitable for the proposed development to be issued prior to occupancy. (This could be staged, as above).
- Any requirements for long term management be incorporated in a LTEMP to be reviewed by an accredited site auditor, and the approved LTEMP to be implemented during operation of the development. (If this is included as a condition of consent, it offers a reasonably mechanism for legal enforcement of the LTEMP, as required by EPA 2017).

I trust these comments are sufficient for your current purposes. Please contact me if you wish to discuss anything further.

Sincerely
GHD

Ian Gregson
Principal Environmental Consultant, NSW EPA Accredited Site Auditor, Accreditation No. 0101
+61 2 4979 9904

Attachments A: Table 1 - Summary of Site Information
B: Review of Remedial Action Plan
C: Limitations to Interim Advice

6 Attachment A – Summary of site information

Table 1 Summary of site information from previous investigations and cRAP

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
Objectives and Scope of Work	Stated objectives were to: • Identify current and past potentially contaminated activities on the site • Assess Areas of Environmental Concern (AECs) and Chemicals of Concern (COCs) for the site • Provide recommendations for further assessment, if required The scope of work comprised a desktop study and historical review of past activities at the site with the potential to cause contamination, including: • Review of historical ownership (title search) • Aerial photograph review for 1959, 1965, 1974, 1983, 1993 and 2004 • S.149 Planning Certificate review • Review of OEH notices for the site and nearby properties • Assessment of site topography, geology and hydrogeology including site drainage and regional groundwater usage • Site walkover and visual assessment of activities, potential contaminant sources, property boundaries, surrounding land uses, topography, drainage and nearby sensitive environments.	The stated objective was to assess the contamination status of soil associated with previously identified AEC [as per Coffey 2012]. The scope of work comprised the following: • Excavation of ten boreholes (BH1 – BH10) using a hand auger, in accessible areas of the site • Logging of ground conditions at each borehole • Field screening of soil samples using a photo-ionisation detector (PID) • Analysis of selected samples for contaminants of potential concern (COPC)	Stated objectives are to define potential remediation and validation requirements, provide a sampling plan for DSI to fill data gaps following demolition, evaluate remedial options, recommend the most appropriate remedial strategy, establish validation criteria, outline the remedial process and remediation management requirements. To meet the objectives, Cardno undertook the following scope of work: • Defined site features, history, areas of environmental concern (AEC) and developed a CSM • Defined need and scope of further investigations to address data gaps • Identified suitable remediation options for identified COPCs • Evaluated options and identified the preferred strategy • Outlined implementation of the preferred strategy • Developed a construction environmental management plan (CEMP) outlining environmental controls, and unexpected finds protocol and contingency plan • Identified WHS and community consultation requirements.
Comments from review: Objectives and scope were considered appropriate for each stage of work, given constraints applying at the time. Cardno notes the cRAP was prepared due to a requirement for lodgement with the DA prior to completion of a detailed site assessment, and hence detailed the sampling and investigation requirements of the DSI in addition to potential remedial options and procedures to be implemented based on the findings of the DSI when available. Remediation objectives, remediation options review and remediation implementation sections from Cardno 2019 are discussed in **Attachment B** below.			

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
Site identification and description	Site identified as 9 Church Street, identified as a portion of Lot 7002 DP 1077042. Site area 4,750 m^2 Site plans show the locality and site boundaries, with site features including original court house building (1890), building extension to the west (1982) and building extension to the east (1949). Adjoining land uses identified as: • Mixed commercial and residential to north • James Fletcher Hospital to south • Police Station to the east • Newcastle Grammar to the west	Site identified as Part of Lot 1 in DP 1199904 [current lot identifier, confirmed by the Auditor with reference to SIX Maps NSW] Site area 5,241 m^2 , Zoning B4 Mixed Use The western portion of Lot 1 in DP 1199904 was noted as part of the adjacent property, with a Figure showing the property and investigation site boundaries. Surrounding land use included the police station to east, a hotel/pub across Church Street, and high density residential properties on the southern and western borders and on the northern side of Church Street.	Site identified as 9 Church Street, Lot 1 DP 1199904, site area approximately 0.52 ha (5,194 m^2). Site plans show current layout, buildings to be demolished. Summary of proposed development provided. Immediately adjoining development includes the Grand Hotel and residential apartments and townhouses to the north, the Newcastle Police Station to the east, and James Fletcher Hospital to the south and west.
Comments from review: The Auditor understands a small portion of Lot 1 DP 1199904 comprises an easement within the adjoining James Fletcher Hospital to the east, and is not part of the subject site. The exact site area and boundaries should be confirmed by survey plan. During site inspection, the contractor (Built) advised the James Fletcher Hospital borders the site both to the south and to the west, consistent with Cardno 2019. The Auditor considers it unlikely that adjoining land uses would affect site contamination conditions, except potentially from the police station to the east.			
Site history	Historical titles were searched dating back to 1883. Indicated the site was Crown Land until 1985, and the State of NSW is current owner. Historical aerial photos from 1959 and 1965 show the central Court House building, a building to the east (apparently different in 1965) and vacant to the west where a building now stands. Buildings to the north east of the site appeared similar to current configuration, buildings to the east and south appeared different, and land to the west was vacant. In 1974 the eastern wing had changed configuration. The property to the east changed configuration by 1974, with the police station developed by 1983.	A summary of Coffey 2012 was provided. Prensa noted the s.149 certificate revealed engine works and fuel / oil storage may have been carried out on the site. An email from Newcastle Council in Appendix H indicates a review of historical information revealed the use of 1 Church Street for engine works and fuel / oil storage, and therefore the property at 9 Church Street is not subject to any known contamination issue by Council.	Cardno identified Coffey 2012 and Prensa 2016 as available previous environmental reports, and provided brief summaries. Site history summary limited, stating the site has been in use as a court house since 1890, with little change in landform except the addition of the eastern and western wings in the 1940s and 1960s. Cardno noted that Prensa and Coffey identified several sources of surface and subsurface impact, indicating a low to moderate contamination potential associated with fill materials and degradation of hazardous building materials which will require further assessment, remediation or management under the proposed land use.

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
	By 1993 large buildings had been added along the neighbouring southern boundary. The S.149 certificate indicated the site is within a proclaimed mine subsidence district and may be affected by land contamination. The s.149(2) certificate stated Council records indicate engine works and fuel/oil storage may have been carried out on the land. No sites with notices listed on OEH records were in proximity to the site. OEH heritage records list an extension to the court house to the east for office and court rooms around 1949, with two trial courts later added to the west. Extensive alternations and additions were carried out in 1982, with repairs following the 1989 earthquake undertaken in 1991. Data gaps identified as follows: • Refurbishment and maintenance may have contaminated the land with hazardous building material such as lead paint and asbestos • Type and amounts of fill are unknown • Makeup and condition of underground services was unknown • Not known if pesticides or insecticides were used to maintain gardens		
Comments from review: Pesticide treatment to buildings may also have occurred, as well as in maintenance of gardens (as indicated by Coffey). Coffey did not comment on the s.149(2) information regarding engine works and fuel/oil storage on the land. Subsequent enquiries by Prensa indicated this was a mistake in the records, and applied to the adjacent site to the east (1 Church Street – the police station). No reports have considered this as a potential source of contamination that may affect the site. Historical records have not been obtained from Council. No Dangerous Goods search appears to have been undertaken (either for the site or adjacent police station). The Auditor recommends available records be obtained as part of additional investigations.			
Site condition	Site inspection in 2012 observed the central court house constructed of timer and sandstone, in good condition with the rear of the courthouse unpaved and overgrown with	The northern half of the site was taken up by 3 conjoined buildings, vacant during site works. The southeast portion was a driveway and car park predominantly covered in bitumen. A thin	States the site is currently unused, and currently accommodates the 1892-constructed former Newcastle Courthouse and two non-original 3-storey buildings, comprising the

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
	grass and several large trees. The eastern wing was a brick building in good condition, founded approx. 0.5 m below the Church Street footpath. The western wing was cut into the slope up to 1.8 m and constructed of concrete. The rear of the site may contain fill.	nature strip paralleled the southern boundary, widening into a garden area with soft cover landscaping including bare soil and grass. The western third of the southern side of the building had a concrete walkway which wrapped around the western side of the building. The north side of the site was mainly bitumen hardstand and brick paving with some garden beds. A driveway entrance located in the northwest corner of the site provided access to the buildings underground parking via Church Street.	former Administration Building constructed in 1949 (the eastern building) and the former Supreme Court building constructed in 1966 (the western building). Site features consist of the main central court building, and the eastern and western wings abutting joined by atria. The remainder of the site is either planted, grassed or hardstand covered. Vegetation described. Refers to Napier and Blakeley Asbestos Materials Report indicating asbestos containing materials (ACM) are present within the buildings onsite. Notes a potential breather point observed in the northeast portion of the site in driveway pavement.
Comments from review: Cardno 2018 Geotechnical report provided a more detailed description of site features, including fill structures acting as buttresses to retaining walls on the south western corner of the site, and also noted the possible underground storage tank refill point or breather noted in the northeast portion of the site in the driveway. While this is also mentioned in Cardno 2019, it has not been further investigated nor identified in the CSM as a potential contaminant source.			
Topography and hydrology	Located on a spur on the lower slopes of 'The Hill'. Relatively level site, modified by historical development. Surface water collected into onsite stormwater pits and drained to municipal underground drainage system,	The site was predominantly flat but sloped gradually from west to east in the western portion. The surrounding area sloped south to north and east to west indicating cut and fill activities likely occurred in the past.	The site is situated within elevated, undulating hilly terrain, on generally east to north east facing slopes. Site surfaces ranged from flat to slightly north east and east sloping, a result of cutting into the natural slopes predominantly in the western (uphill) portion during development. The floor level of the western building was in the order of up to 2 m below the adjacent footpath and Church Street road formation level.
Comments from review: Topography and hydrology have been adequately considered, although there is no mention of the stormwater easement through the site.			
Geology and hydrogeology	Newcastle 1:50,000 Geological Sheet indicates the site is underlain by the Newcastle Coal Measures – sandstone, siltstone, claystone, coal and tuff. Search of registered bores in 2009 indicated two registered bores within 1 km radius.	No further assessment of geology or hydrogeology was included (except by way of site observations – noted in the Results section below).	Geology as per Coffey 2012. CSM summarised site geology as Fill material consisting of Gravelly, Clayey and Silty SAND, underlain by Silty Clayey and Sandy CLAY and Silty CLAY followed by sandstone bedrock.

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
	Registered for "Irrigation" purposes, more than 700 m to north of the site, most likely in Hunter River alluvial deposits. Water bearing zones 1.2 – 4.1 m in sand. Based on observations of surrounding topography, groundwater at the site is expected to be located within the underlying bedrock at a depth between about 10 m to 15 m, expected to flow to north and east discharging to the Hunter River of Newcastle Beach.		Based on acid sulfate soils mapping, there are no known occurrences of acid sulfate soils in the immediate area of the proposed development. No details of hydrogeology except in CSM, which states groundwater is present as a shallow rock aquifer approximately 8 to 12 m bgl.
Comments from review: No groundwater information relevant to the site was sourced, and there is no apparent basis for the expected depth of groundwater stated in Coffey, Prensa and Cardno cRAP. Shallow (perched) groundwater may be present on the fill (or soil) / bedrock interface. Coffey 2018 Geotechnical report encountered groundwater inflow during drilling of BH01 (southeast corner of site) at a depth of 8 m bgl, and seepage during drilling at BH3 (to the north of north-western corner of the site) at about 12 m bgl, both in extremely weathered bedrock (silty CLAY).			
Potential contaminants	Potential chemicals of concern (COCs) identified as TPH, PAH, BTEX, OCPs, OPPs, Metals and Asbestos	Potential areas and contaminants targeted comprised asbestos, BTEX, OCP/OPP, PCB, TRH, PAH and heavy metals, particularly lead.	COPCs identified above adopted Tier 1 screening criteria comprised TRH C_{16}-C_{34}, benzo(a)pyrene, BaP TEQ and lead.
Comments from review: Potential contaminants associated with fuel storage have not been considered in the cRAP. The cRAP did not include asbestos in the identified COPCs, although proposed remediation management procedures do cover asbestos contamination. Further consideration should be given to the potential for contamination associated with the existing buildings, including potential sub-slab pesticide treatment, and contamination by hazardous building materials as a result of the proposed demolition works. The Auditor notes that the Napier & Blakely Asbestos Materials Report identified a range of asbestos building products within structures on the site. This included visible asbestos cement debris (small scattered fragments) to the rear of buildings B and C, and asbestos cement water piping and electrical conduit should be presumed present in underground locations across the site. There is a high potential for asbestos contamination to soils to occur from demolition activities, and assessment following demolition should specifically consider this. While unlikely to be present, the Auditor notes that the EPA 2017 *Guidelines for the NSW Auditor Scheme* impose a requirement to specifically consider whether PFAS are a potential contamination issue.			
Conceptual site model (CSM)	CSMs not required at the time of this report. Potential contaminating activities identified as: • Weathering and/or maintenance / demolition of hazardous building materials • Infiltration of potential contaminants through poorly maintained pavements • Potential use of fill on site	No CSM per se was included. Potential sources of contamination targeted during the DSI were limited to uncontrolled historical fill, potential historical use of pesticides and insecticides, and degradation / demolition of hazardous building materials. Potential receptors and exposure pathways were considered to comprise:	Provisional CSM presented, including sources of contamination, COPCs (as above), distribution of COPCs, site specific lithological information (as above) and actual and potential receptors. The provisional CSM is to be updated pending the results of further testing. Potential contaminant sources include: • Uncontrolled placement of fill material

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
	• Potential use of pesticides and insecticides Noted that the site has been developed over time, and the only accessible soil on site is limited to an approximately 10 m x 30 m area at the rear of the site.	• Future site occupants, from direct contact and inhalation (dermal contact and ingestion) with contaminated soil, dust and fibres; and vapour intrusion and inhalation from volatile contaminants. • Shallow and intrusive maintenance and excavation workers (including construction) with pathways as above. • Groundwater.	• Uncontrolled demolition, weathering and maintenance of buildings containing hazardous building materials • Potential pesticide and insecticide use and storage Given the depth to groundwater and COPCs identified for soil, site sourced groundwater impacts are not expected. Should additional investigation reveal a risk to groundwater, these will be incorporated into the CSM. Receptors include current and future site users and construction and maintenance workers, with complete pathways including direct contact and ingestion pathways to contaminated soil. Ecological receptors identified by considered to be low significance. Further investigation required to assess statistical significant of findings.
Comments from review: Prensa did not expand potential contaminant sources from those identified by Coffey. Vapour intrusion was considered as a potential exposure pathway by Prensa, but not in Cardno's CSM. As noted above, the potential on-site UST and fuel/oil storage on the adjacent police station have not been included as potential contamination sources. Potential contaminant impacts from proposed demolition works should also be given further consideration.			
Sampling plan and methodology	No sampling undertaken.	A DQO process was included in Appendix A. The "Problem" was based on contamination sources identified by Coffey. Decisions related to identifying CoPC associated with potential soil contamination, what risks the CoPC present, and whether remediation or management was required prior to divestment. Methodology was described, noting boreholes were progressive using a hand auger in accessible areas, with sampling density in general accordance with the minimum described in AS4482.2 for a site of this size. The hand auger was decontaminated between boreholes. Soil samples were collected directly from the hand auger, and a PID was used to screen the soil profile for potential volatile	DQOs for further investigations provided. The "Problem" was identified as COPCs exceeding Tier 1 criteria, however Cardno noted that complete assessment of the site is yet to be undertaken. Decisions align with cRAP objectives summarised above. Inputs include previous investigations and those to be undertaken. The vertical extent of excavations was defined as the depth of fill or depth of proposed excavations. Decision rules, DQIs and an outline sampling plan provided. Specific investigation locations not defined, but number of sampling points to be based on NEPM guidance and NSW EPA

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
		organic compounds (VOC) and evidence of hydrocarbon contamination. Subsurface conditions were logged and borehole logs provided in Appendix D.	Waste Classification guidelines. s.8.1.1 indicates a minimum of 10 samples for a site of 0.32 ha, but will be further assessed prior to investigations. Detailed methodology not provided, but reference to guidelines.
Comments from review: Previous investigations have been limited by site accessibility (buildings occupying most of the site). A detailed sampling and analytical quality plan should be prepared for the further investigations, taking into account the potential contamination sources and exposure pathways (notably potential hydrocarbons storage and use on site or on adjacent land; potential groundwater impact and vapour intrusion, and impacts from proposed demolition works). The preliminary CSM should be updated, incorporating these factors, as a basis for planning investigations.			
QA/QC	Not discussed (no investigations undertaken)	Data quality indicators (DQIs) were established as part of the DQO process. Samples were analysed by NATA accredited labs, Envirolab and Eurofins MGT for the COPC listed above. Two samples were also analysed for leachable benzo(a)pyrene using ASLP. Prensa reviewed QA/QC in Appendix F. Sampling procedures and sample handling documented and considered acceptable. A blind and split duplicate sample were analysed for the CoPC (excluding asbestos). RPDs were acceptable in accordance with DQI thresholds except for benzo(a)pyrene TEQ calculation (PQL) in one sample, with results close to the laboratory PQL and attributed to soil heterogeneity. Rinsate and trip blanks were analysed with acceptable results (one spike attributed to plastic containers). Laboratory QA/QC was reviewed and considered acceptable. Prensa considered the data could be relied upon for the purposes of the assessment.	Relatively comprehensive DQIs outlined as part of DQO process.
Comments from review: QA/QC has been adequate in the investigations undertaken to date, and appropriate QA/QC procedures are outlined for the proposed future investigations.			

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
Basis of assessment criteria	Not discussed (no investigations undertaken)	Criteria adopted from NEPC 2013 Schedule B1, for current commercial / industrial and potential future high density residential land use. Appendix C discussed HILs, HSLs (including CRC CARE 2011 HSLs). Sandy soil type selected as a conservative approach. Petroleum hydrocarbon management limits were included, with EILs and ESLs. An asbestos criterion of 0.1 g/kg for asbestos identification in soil and non-detection for trace analysis was adopted. Criteria were shown in results tables.	HILs, HSLs, EILs and ESLs for residential sites without accessible soils adopted for additional investigation stage and as validation Remediation Goals (RGs) for any remedial works. As the Site will operate as an educational facility, the NEPM 1999 HILs for Residential B (HIL B), HSLs for Residential B (HSL B), and the EILs and ESLs for Urban Residential areas and Public Open Space have been adopted. HSLs for Sand textures have been applied. Aesthetic criteria will also apply. Criteria presented in Table 5-1.
Comments from review: Assessment criteria are generally considered appropriate.			
Results of investigations	None undertaken.	Fill material was encountered across the site to depths generally ranging from surface to 1.2 m bgl, except for BH10 where fill was encountered to 3.3 m bgl. Fill was underlain by weathered sandstone and clay encountered at depths between 0.55 m and 0.8 m bgl in BH5-BH7 and BH9. Groundwater was not encountered, and no visual or olfactory evidence of soil contamination, including suspected asbestos-containing materials (ACM) was noted during sampling. The highest PID reading was 5.1 ppm, indicating VOCs were unlikely to be present. Asbestos was not detected, and COPC were less than adopted assessment criteria for commercial / industrial or high-density residential land use except the following: • Benzo(a)pyrene (BaP) in 3 samples greater than commercial / industrial and high density residential ecological screening level (ESL) [3.6 mg/kg to 5	CSM summary and risk assessment section noted the following: • Identified lead and BaP TEQ in fill indicate potential health risk via ingestion and direct contact. Further investigation, remediation, management or risk assessment required to determine or mitigate the risk and render the site suitable for the proposed land use. Remediation prior to completion of development, potential impact considered to be the depth of fill, pending further investigations. • BaP and TRH $C1_6$-C_{34} require further assessment to determine whether concentrations are statistically significant and to compare against current guidelines. As the majority of the site is likely to remain as hardstand, potential risks to ecological receptors are considered to be low. [Cardno noted the ESL for BaP used by Prensa was the NEPM low reliability ISL, and CRC CARE

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
		mg/kg vs ESLs of 1.4 mg/kg and 0.7 mg/kg respectively] • BaP Toxicity Equivalent Quotient (TEQ) in 3 samples greater than the high density residential health investigation level (HIL) [5.2 mg/kg to 7.3 mg/kg vs HIL of 4 mg/kg] • TRH (C_{16}-C_{34}) in one sample greater than the high density residential ESL [340 mg/kg vs ESL of 300 mg/kg] • Lead in one sample greater than the high density residential HIL and EIL [1,400 mg/kg vs EIL of 1129 mg/kg and HIL of 1200 mg/kg] Leachable concentrations of benzo(a)pyrene were less than the laboratory PQL.	has since published a high reliability ecological guideline of 33 mg/kg]. • Data gaps exist due to the inability to conduct complete investigations beneath the building and hardstand footprints. • There is likely to be variability in the quality and type of fill at the site. Should unidentified areas of soil impacts be discovered in further phases of site work, additional investigations and addition to the cRAP will be required. • An Unexpected Finds Protocol is to be developed dictating actions and responses.
Comments from review: Contamination identified to date is relatively minor, and if contamination found by further investigations is consistent with this, it may not be statistically significant. If that is the case, remediation per se may not be required, and contamination issues would be limited to appropriate classification and disposal of waste.			
Site characterisation / discussion		Included discussion of results as above. Discussion noted selected soil samples collected from fill across the site (excluding the garden beds) were analysed for COPC. Based on the analytical results and field observations Prensa considered the presence of benzo(a)pyrene was likely associated with the presence of bitumen fragments in the fill, with the potential for leaching being low. Ecological criteria were exceeded for TRH and lead, but based on the urban setting of the site and soil conditions encountered, Prensa considered it unlikely that soil processes or biota would be materially affected, given the current zoning of the site, and as such the potential risk to significant ecological receptors was considered low. The lead exceeding the HIL for high density residential use was considered a statistical	Discussion mentioned in other points above.

Aspect	Coffey 2012 Phase 1 ESA	Prensa 2016 DSI	Cardno 2019 cRAP
		outlier. The sample was collected at shallow depth in proximity to the northern façade of the old court house, and could be attributed to lead based paint in surface soils rather than being representative of fill across the site.	
Comments from review: Site characterisation discussions adequately addressed in at least some sections of the respective reports.			
Conclusions	The site was assessed as having a low to medium likelihood of soil contamination. Potential contamination relates to: • Weathering and or maintenance / demolition of hazardous building materials • Potential use of fill • Potential use of pesticides and insecticides Given buildings and pavements cover the majority of the site, exposure to and/or offsite migration of potential soil contamination is limited. If the buildings and pavements remain in their current configuration then further investigation is not required at this time.	The concentrations of TRH, benzo(a)pyrene and lead would not preclude an ongoing commercial use of the site. Based on the fieldwork undertaken and analytical results, Prensa concludes that the potential risk to human health and the environment, in light of the proposed divestment of the site under current land zoning, is low-moderate given the potential for future high density residential land use at the site.	No conclusions presented.
Comments from review: Coffey and Prensa conclusions considered appropriate for the respective stages of assessment. Absence of conclusions in cRAP is contrary to reporting guidelines, but doesn't affect overall content of the cRAP or the Auditor's opinions regarding it's appropriateness.			
Recommend-ations	Should redevelopment be proposed, including demolition of non-heritage listed buildings and pavements, Coffey recommends a Phase 2 ESA be carried out targeting the identified AECs that are likely to impact on the proposed development. The assessment should include, but not necessarily be limited to, the collection of surface soil samples from fill, around the buildings and gardens and laboratory analysis of samples for the identified COCs.	Should the site be redeveloped for a more sensitive land use such as high density residential, further assessment, management and/or remediation of fill across the site is recommended in open areas and beneath slabs following any proposed demolition.	No summary of recommendations. Various recommendations contained throughout the cRAP as discussed above.
Comments from review: Coffey and Prensa recommendations are considered appropriate, and the cRAP is consistent with following these recommendations.			

7 Attachment B: Review of Cardno 2019 cRAP

Aspects of the Cardno cRAP relating to site characteristics, summary of previous investigations and the proposed additional investigations are reviewed / discussed in Table 1 above.

For the remediation and management aspects of the RAP, the Auditor has referred to the specific reporting requirements for RAPs from the *Guidelines for Consultants Reporting on Contaminated Sites* (OEH 2011). The compliance of the RAP with these requirements is illustrated in Table 2.

Table 2 cRAP compliance with Reporting Guidelines (OEH 2011)

Reporting requirement	cRAP compliance
Remediation goals	Section 5.1 - purpose of proposed remedial works is to complete site characterisation, and manage and/or remediate identified impacts such a way that potential risks to human health and the environment are minimised or eliminated. Primary objectives for the remedial works are to: • Complete the characterisation of the Site through additional soil investigations • Remediate or manage identified benzo(a)pyrene, lead and TRH impacted soils and any impacts identified during further investigation in such a manner that the potential risk to human health or the environment is minimised; and • Remediate or manage impacted soils in such a manner that the Site is made suitable for the proposed land use as an educational and student accommodation facility. Remediation goals are discussed in Table 1 above, in relation to Assessment Criteria.
Auditor's opinion: Remediation objectives and goals are considered appropriate for contamination identified to date. Further goals will be required if there is impact to groundwater or vapour intrusion risk.	
Discussion of extent of remediation required	Not specifically discussed, pending additional investigations. Limited to areas of site where demolition and redevelopment will occur. DQOs (s.6.1 Step 4) indicate vertical study boundaries are limited to depth of fill or depth of proposed excavation for waste classification purposes. s.5.4 – notes further investigation or remediation may be required during the construction phase of the proposed works. Triggers may include: • Unexpected finds including impacted (visually stained and/or odorous) soils during earthworks • Presence of previously unidentified asbestos • Identification of buried waste.
Auditor's opinion: The Auditor agrees that contamination beneath the heritage court house building is unlikely. The potential extent of remediation has not considered potential impacts from fuel storage and handling, either on-site or from adjacent site to the east (police station), which could involve remediation other than that limited to the depth of existing fill. This could be provided in a detailed RAP following the proposed additional investigations.	

Reporting requirement	cRAP compliance
Discussion of possible remedial options and how risk can be reduced	s.7.2 - Remediation hierarchy outline based on recommended NSW EPA screening process. (See further comment in **Table 3** below). s.7.3 – outlines remedial options and discussed advantages and disadvantages. General characteristics of proposed development (excavation works required, buildings or hardstand proposed) considered in preferred options.
Auditor's opinion: Discussion of options is considered generally appropriate, although not all factors (eg. timing, transport risks, sustainability) have been considered in the evaluation, and potential fuel impacts have not been considered in remediation requirements, as noted in **Table 1**.	
Rationale for the selection of recommended remedial option	s.7.3 - selection of preferred option pending further investigation results, finalised design and business case for implementing each option. As such, two scenarios provided incorporating the preferred options. s.8.2 – Remediation strategy (RS) 1 involves off-site disposal of soils impacted with COPCs above adopted Tier 1 criteria. Takes advantage of excavation and removal of soil required for the development, to remedy identified impacts. Outlines sequence of works and validation requirements. Formal RAP to be developed detailing proposed works and site specific control measures. s.8.3 – RS 2 involves a combination of off-site disposal as required for construction, and on-site containment using hardstand paving, basements, behind retaining walls or within lift shafts. Subject to geotechnical requirements. Outlines sequence of works and validation requirements, including inspections and survey of capping measures. Capping to meet requirements of ANZECC 1999 *Guidelines for the On-site Containment of Contaminated Soil*. Nominal requirements include marker layer, buffer layer and impervious hardstand.
Auditor's opinion: Rationale is reasonable for contamination identified to date, although potential fuel impacts not considered. Required cut/fill balance not specified, which may influence preferred option (i.e. if there is a net requirement to remove material from the site and volumes are relatively small, containment may not be warranted). Lift shafts likely to be generators of excess spoil rather than potential containment volume.	
Data gaps	s.8.1.1 – outlines data gap investigations. See also **Table 1** above. Additional sampling and inspection to refine the lateral extent of impact for previously and any new identified AECs. Waste classification to characterise fill material and any natural soils requiring excavation and disposal.
Auditor's opinion: Data gaps are acknowledged in cRAP. As noted in **Table 1**, a detailed SAQP should be developed, taking into account the potential contamination sources and exposure pathways.	
Validation plan	s.11 – requirements for validating remaining soils, re-use or imported soils, and implementation of any on-site containment measures. Outlines requirements for visual inspection and survey, validation of excavations, soil for re-use, excavated natural material and imported fill.
Auditor's opinion: Combined with DQO sections in the cRAP, the validation plan is considered adequate at a concept level, but would require further detail once site characteristics and remediation requirements are fully established. This could be provided in a detailed RAP following the proposed additional investigations.	

Reporting requirement	cRAP compliance
Contingency plan if the selected remedial strategy fails	s.12 – outlines measures to address previously unidentified contamination (further assessment), greater soil volumes (strategies are scalable), unintended release of stockpiled soil or water (stockpile management and weather forecasts) and water ingress to excavations (removal, dewatering or barrier).
Auditor's opinion: Two remediation strategies have been presented, however neither takes potential impacts from fuel storage into account. Reasonably foreseeable contingencies are summarised, and measures are considered feasible but are presented in little detail. Further detail could be provided in a detailed RAP. Contingencies are less likely to be required if and when the site is further characterised.	
Adopted remediation criteria	s.5.2 – see **Table 1** above.
Interim site management plan (before remediation)	Not stated. Site is vacant and fenced, further site management is not considered to be required.
Site management plan (operational phase)	s.9 – outlines a Construction Environmental and Waste Management Plan to minimise potential impacts of [remediation] works on the local environment, site workers and third parties. Requirements outlined for management of stockpiles, waste tracking, excavation water, air quality and dust, asbestos waste, unexpected finds, stormwater, noise, excavation and transport, site management, and stakeholder roles and responsibilities. s.10 – outlines requirements for work health and safety (WHS), including requirement for the Principal Contractor to develop specific WHS documents. An incident management plan is provided, and requirements for incident reporting and community consultation outlined.
Auditor's opinion: The outline provided is generally appropriate. There should be a requirement for the remediation contractor or site developer to prepare a detailed CEMP.	
Remediation schedule	Not stated. (Not likely to be known at this time).
Hours of operation	Not stated.
Contingency plans to respond to site incidents	Provided in s.10.2, for medical emergencies, fire and environmental incidents. Could be covered in more specific detail in a CEMP.
Identification of regulatory compliance requirements	s.13 – identifies waste management and environmental protection requirements (asbestos waste management further discussed in s.9.4). Notes that under SEPP 55, works are considered to be Category 2 remediation work not needing consent, but prior notification and provision of a Site Validation Report would be required.
Auditor's opinion: The cRAP does not acknowledge that on-site containment would make the remediation Category 1, under Council's *Newcastle Development Control Plan 2012* and the associated *Technical Manual, Contaminated Land Management*. (Although the Auditor notes that Cardno Technical Note dated 29 April 2019 notes that DPE stated if the site requires remediation works, it must form part of the development as it would be Category 1 remediation).	

Reporting requirement	cRAP compliance
Names and phone numbers of appropriate personnel to contact during remediation	Not stated. (Not likely to be known at this time).
Community relations plans	s.10.4 – requirement mentioned. s.9.9.6 identifies Client / Owner as responsible for liaison with neighbours and other stakeholders.
Staged progress reporting, where appropriate	Mentioned in s.8.1.1 in relation to assessment, but not further discussed in relation to remediation and validation.
Auditor's opinion: The Auditor recommends review by an accredited site auditor of the proposed DSI report and proposed detailed RAP prior to commencement of remediation. If development is staged, associated reporting could be carried out independently for each stage (subject to development consent allowing for this).	
Long term site management plan	s.8.3.3 – if on-site containment is adopted, a Long Term Environmental Management Plan (LTEMP) would be required to detail the location and nature of the emplaced soils, and the ongoing responsibilities and management requirements for the material. The LTEMP would include strategies to avoid the likelihood of breaching the capping layer, and procedures to be following in the event a breach occurs.
Auditor's opinion: The cRAP does not provide a draft LTEMP, nor propose how implementation of a LTEMP would be enforced. The Auditor suggests a condition of consent could be included as a contingency, requiring implementation of any LTEMP as part of operation of the development. (EPA guidelines have specific requirements for a LTEMP, as discussed in **Table 3** below). If a detailed RAP is prepared following detailed investigations which requires long term management as part of the preferred remediation strategy, a draft LTEMP should be provided as part of the RAP.	

The *Guidelines for the NSW Site Auditor Scheme* (EPA 2017) also provides specific guidance in relation to remediation policy and issues. Compliance of the RAP with relevant issues from this guidance is illustrated in **Table 3**.

Table 3 Compliance with remediation policy (from EPA 2017)

Aspect	cRAP compliance
Remediation hierarchy	Discussed in s.7.2 of cRAP. The Auditor notes the remediation hierarchy presented is not consistent with current guidelines, as it puts "do nothing" first rather than last (eg. may be acceptable if remediation has no net environmental benefit); and the lower options of off-site disposal and on-site containment have been reversed in NEPC 2013 which is referenced by NSW EPA 2017.
On-site containment and capping	On-site containment and/or capping is one of two options put forward in the cRAP. EPA 2017 includes specific requirements (long term stability, no erection of structures that may result in a risk of harm, notification

Aspect	cRAP compliance
	mechanism) which have not been specifically discussed in the cRAP, but which are likely able to be addressed, with engineering design if necessary to address vapour intrusion risks (if any). The Auditor notes that Council's *Newcastle Development Control Plan 2012* and the associated *Technical Manual, Contaminated Land Management* also have specific requirements relating to capping / containment of contaminated soil, including that this would be category 1 remediation.
EMPs	EPA 2017 (s.3.4.6) has specific requirements for long term management plans, including review of the EMP by an auditor, that the EMP can reasonably be made legally enforceable, public notification of any restrictions applying to the land, and no off-site migration of contamination from the land. The cRAP does not specifically discuss any of these issues.
Contamination at depth	The cRAP does not currently propose to leave any contamination at depth (currently identified contamination assumed to be confined to fill material). Should deeper contamination be identified as a result of additional investigations but proposed to be left at depth, the specific requirements of EPA 2017 s.4.3.4 would need to be addressed.
Vertical mixing	Vertical mixing is not proposed.
Bioremediation	Bioremediation of contaminated soils is mentioned in discussion of options but is not proposed.
Waste management	Waste management requirements are discussed briefly in Sections 9.1.1 and 9.4 of the cRAP. Further details are required to ensure the requirements of EPA 2017 s.4.3.7 are met, if the remediation works are subject to site audit.
Chemical Control Orders / asbestos waste	No contaminants subject to chemical control orders have been identified on the site. Requirements relating to asbestos waste management are discussed in s.9.4 of the cRAP.
Groundwater remediation and management	Groundwater contamination has not been assess, and has not been considered in data gaps discussed in the cRAP.
Hazardous ground gas remediation and management	Hazardous ground gas has not been considered as a potential contamination issue in the cRAP. This could include methane from shallow coal workings (which the Auditor understands are subject to further geotechnical investigation) as well as potential vapour intrusion if fuel impacts are present to soil or groundwater.
Auditor's opinion: While the cRAP is not contrary to remediation policy, it does require additional detail in a number of areas to address EPA 2017 remediation policy and guideline requirements. This could be provided in a detailed RAP following the proposed additional investigations.	

Attachment C: Limitations to Interim Advice

This Interim Advice has been prepared as part of a site audit undertaken in accordance with relevant provisions of Part 4 of the Contaminated Land Management (CLM) Act 1997.

This Interim Advice:

1. has been prepared by Ian Gregson and members of his support team as indicated in the appropriate sections of this Interim Advice ("GHD") for dwp and Azusa Sekkei;
2. may be used and relied on by dwp and Azusa Sekkei;
3. may be used by and provided to the EPA and the relevant planning authorities for the purpose of meeting statutory obligations in accordance with the relevant sections of the CLM Act 1997 or the Environment Planning and Assessment (EP&A) Act 1979;
4. may be provided to other third parties but such third parties' use of or reliance on the Interim Advice is at their sole risk, as this Interim Advice must not be relied on by any person other than those listed in 1-3 above without the prior written consent of GHD; and
5. may only be used for the purpose as stated in **Section 1** of the Interim Advice (and must not be used for any other purpose).

GHD and its servants, employees and officers (including the Auditor) otherwise expressly disclaim responsibility to any person other than dwp and Azusa Sekkei arising from or in connection with this Interim Advice.

Whereas these current opinions and recommendations have been provided as interim guidance to assist in the assessment and management of contamination issues at the site, this guidance should not be regarded as "approval" of any proposed investigations or remedial activities, as such approval is beyond the scope of an independent review. The NSW EPA *Guidelines for the NSW Site Auditor Scheme* (2017) contains a description of the site assessment and audit process, which includes the following:

- A site audit is the second in two tiers of work in the site assessment and remediation process.
- The **'first tier' is the work of a contaminated site consultant**, generally engaged by the site owner or developer. The contaminated site consultant designs and conducts a site assessment and any necessary remediation and validation, and documents the processes and information in reports; and
- The **'second tier' is the site audit** which involves a site auditor independently and at arm's length reviewing, for one of the audit purposes stated in the CLM Act, the consultant's assessment, remediation and validation plans or reports. The material outcomes of a site audit are a site audit report and site audit statement.

The purpose of the auditor's review is to assess whether the works undertaken (or proposed to be undertaken) comply with current regulations, standards and guidelines, and that the site has been assessed, remediated and validated to a standard appropriate for the proposed land use. In the first instance, the contaminated land consultant should be satisfied that the work to be conducted conforms to all appropriate regulations, standards and guidelines; and is appropriate, based on the site's historical land use, physical characteristics and proposed land use.

This interim review and advice do not constitute an audit under the provisions of the Contaminated Land Management (CLM) Act 1997, and do not pre-empt the conclusions which will be drawn at the end of the audit process. A site audit report and site audit statement will be issued when the audit process has been completed.

It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be completely known and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site. Professional judgement must be exercised in the collection and interpretation of the data. In the conduct of

this review, in particular, reliance has been placed on data provided in the various site investigation and assessment reports. The Auditor is unable to provide certification outside of areas over which he had some control or is reasonably able to check, and does not accept responsibility for inaccuracies in information provided for review as part of this Audit.

To the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by GHD and the Interim Advice are excluded unless they are expressly stated to apply in this Interim Advice.

The services undertaken by the Auditor, his team and GHD in connection with preparing this Interim Advice were undertaken in accordance with current profession practice and by reference to relevant guidelines made or approved by the EPA under Section 105 of the CLM Act 1997.

The opinions, conclusions and any recommendations in this Interim Advice are based on assumptions made by the Auditor, his team and GHD when undertaking services and preparing the Interim Advice ("Assumptions"), as specified throughout this Interim Advice. GHD and the Auditor expressly disclaim responsibility for any error in, or omission from, this Interim Advice arising from or in connection with any of the Assumptions being incorrect.

Subject to the paragraphs in this section of the Interim Advice, the opinions, conclusions and any recommendations in this Interim Advice are based on conditions encountered and information reviewed at the time of preparation of this Interim Advice and are relevant until such times as the site conditions or relevant legislations changes, at which time, GHD expressly disclaims responsibility for any error in, or omission from, this Interim Advice arising from or in connection with those opinions, conclusions and any recommendations.

The Auditor and GHD have prepared this Interim Advice on the basis of information provided by the client, their consultants and others who provided information to GHD (including Government authorities), which the Auditor and GHD have not independently verified or checked ("Unverified Information") beyond the agreed scope of work.

The Auditor and GHD expressly disclaim responsibility in connection with the Unverified Information, including (but not limited to) errors in, or omissions from, the Interim Advice, which were caused or contributed to by errors in, or omissions from, the Unverified Information.

The opinions, conclusions and any recommendations in this Interim Advice are based on information obtained from, and testing undertaken at or in connection with, specific sampling points and may not fully represent the conditions that may be encountered across the site at other than these locations. Site conditions at other parts of the site may be different from the site conditions found at the specific sampling points.

Although reasonable care has been used to assess the extent to which the data collected from site is representative of the overall site condition and its beneficial uses, investigations undertaken in respect of this Interim Advice are constrained by the particular site conditions as discussed in this Interim Advice. As a result, not all relevant site features and conditions may have been identified in this Interim Advice.

Site conditions (including any the presence of hazardous substances and/or site contamination) may change after the date of this Interim Advice. The Auditor and GHD expressly disclaim responsibility:

- Arising from, or in connection with, any change to the site conditions;
- To update this Interim Advice if the site conditions change.

These Disclaimers should be read in conjunction with the entire Interim Advice and no excerpts are taken to be representative of the findings of this Interim Advice. This Interim Advice should not be altered, amended or abbreviated, issued in part or issued incomplete in any way without prior checking and approval by GHD.