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4 September 2020

Mr Nick Caltabiano
Project Manager
Geotechnical Consultants Australia

CENVP REVIEW OF DETAILED SITE INVESTIGATION – 1290 GREENDALE ROAD, WALLACIA, NSW (GCA – AUGUST 2020, REF: E20111-1-1)

Dear Nick

1. INTRODUCTION AND BACKGROUND

Geotechnical Consultants Australia (GCA) engaged Toby Scrivener, a Certified Environmental Professional – Site Contamination Specialist (CEnvP (SC)) under the EIANZ scheme, who is employed by Harwood Environmental Consultants Pty Ltd (HEC) to review the following reports:

- Detailed Site Investigation, 1290 Greendale Road, Wallacia, NSW (GCA – August 2020, ref: E20111-1); and
- Preliminary Site Investigation, 1290 Greendale Road, Wallacia, NSW (Trace Environmental – July 2020, ref: 99.72).

This review has been prepared in accordance with the requirements of the Draft Contaminated Land Planning Guidelines, the National Environment Protection (Assessment of Site Contamination) Measure (NEPC 2009, as amended 2013) and the NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated Sites*.

This review does not constitute a Site Audit Report and HEC was not complicit in sourcing information from third party providers nor were they involved in completion of any field work or laboratory analysis. This review is a third party, independent review of the work completed by GCA.

2. CONTAMINATED LAND PLANNING GUIDELINES – DRAFT (2018)

The Contaminated Land Planning Guidelines – Draft (2018) state the following relating to review of reports by Certified Contaminated Land Consultants:

A certified contaminated land consultant (in the context of the investigation, assessment, remediation and validation of contaminated land) is a contaminated land consultant, whose qualifications and experience have been confirmed through a recognised certification scheme to have the necessary competencies to carry out work relating to contaminated land to an appropriate standard.

Certification schemes that are recognised by the EPA as providing a suitable level of accreditation for contaminated land consultants are listed on the EPA's website.

A certified contaminated land consultant, typically engaged by the site owner or applicant, conducts site investigations and assessments, undertakes any necessary remediation and validates the remediation work when it is completed.

A certified contaminated land consultant may be engaged by a planning authority at any time to review the work undertaken by another certified contaminated land consultant.

Planning authorities should be aware that, under the CLM Act, only accredited site auditors can undertake site audits and issue site audit statements.

3. DOCUMENT REVIEW

The following documents have been reviewed:

- Detailed Site Investigation, 1290 Greendale Road, Wallacia, NSW (GCA – August 2020, ref: E20111-1).
 - The Author of the report was Oskar Lamperts – “Graduate Environmental Scientist”, the reviewer for GCA was Nick Caltabiano – “Project Manager”, and Issuer for GCA as Joe Nader. The signatories to the report are not currently recognised as Certified Environmental Practitioners.
- Preliminary Site Investigation, 1290 Greendale Road, Wallacia, NSW (Trace Environmental – July 2020, ref: 99.72).
 - The Author of the report was Aaron Walker – “Principal Environmental Engineer”, the reviewer/approver for Trace Environmental was Ken Henderson – “Principal Environmental Scientist”, and Certified Environmental Practitioner (SC #40922).

A detailed review of the GCA report with respect to NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated Sites* has been completed; see Attachment 1 for the review. The PSI (Trace Environmental, July 2020) has been reviewed for context only.

A summary of both reports is provided below.

3.1. Preliminary Site Investigation (Trace Environmental, July 2020)

- The site area is approximately 73.8ha.
- The site has been used for agricultural land use purposes since at least approximately the 1950s. The site currently comprises a homestead with a garage, sheds, a former dairy shed, silos, two dams, cattle grazing areas and various paddocks with crops.
- Potentially contaminating activities/source areas at the site were identified as:
 - Fill materials.
 - Hazardous building materials.
 - An above ground storage tank.
 - Chemical storage areas.
 - Application of herbicides/pesticides in paddocks.
- Contaminants of potential concern associated with the above included:
 - asbestos.
 - total petroleum hydrocarbons (TPH)/total recoverable hydrocarbons (TRH).
 - benzene. toluene. ethylbenzene. xylenes and naphthalene (BTEXN).
 - polycyclic aromatic hydrocarbons (PAHs).
 - organochlorine pesticides (OCP). organophosphorus pesticides (OPP).
 - polychlorinated biphenyls (PCB).
 - herbicides.

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- phenols.
 - heavy metals.
 - oil and grease.
 - fungicides.
 - fertilisers and
 - volatile organic compounds (VOCs).
 - Trace Environmental recommended a Detailed Site Investigation be completed to determine if the site is suitable for the proposed land use (cemetery).

3.2. Detailed Site Investigation (GCA, August 2020)

- GCA completed the following field investigation:
 - Excavation of 15 test pits and five soil bores targeted to areas of potential concern.
 - Sampling of surface water from two dams.
 - Collection of a groundwater sample from an existing monitoring well.
 - Submission of fifteen composited soil samples (Pit 1 to Pit 15 inclusive) to a NATA accredited laboratory for analysis of COPC comprising TRH, BTEX, PAHs, PCB, Phenols, VOCs, OCPs, OPPS, heavy metals and asbestos. Pit 1, 10 and 12 to be also tested for pH and CEC.
 - Submission of twelve composited soil samples (BH1.1 to 5.2 inclusive) to a NATA accredited laboratory for analysis of COPC comprising OCP/OPP, Fertilizers, Herbicides, TRH, BTEXN, PAH, PCB, Phenols, VOCs and Heavy Metals.
 - Groundwater samples were analysed for TRH, BTEX, metals, phenols and PAH.
- Maximum soil investigation depth was 1.2m below ground level.
- There were no obvious signs of contamination reported in each sampling location with the exception of Pit6 which was described as *“Organic-rich fill material, general solid waste. (further assessment required to classify the entire area of fill material)”*.
- GCA applied the open space criteria for this investigation, this is suitable for the proposed redevelopment of the site as a cemetery.
- The data collected meet the land use criteria however as the soil samples were composited a reassessment of the data is required – see comments below.
- GCA concluded that based on the data *“the site can be made suitable”* so long as their recommendations are implemented. These recommendations included:
 - *Undertake a Hazardous Materials Building Survey (HMS) for all onsite structures, with any control measures outlined in the HAZMAT survey to be implemented during demolition.*
 - *If the onsite dams are to be decommissioned, a suitably qualified Ecologist to be engaged to undertake an Ecological Survey and Dewatering management plan.*
 - *The area identified by TP6, which had identified uncontrolled fill material should be assessed, quantified and classified in accordance with the NSW EPA Waste Classification Guidelines. It is likely that this material will need to be removed offsite.*
 - *Closing of Data Gap investigation, this will involve assessment of the following:*
 - *Assessment of areas beneath current onsite structures and footprints.*
 - *Assessment of area around the removed septic tank, including any ground water*

- Any soils requiring removal from the site, as part of future site works, should be classified in accordance with the “Waste Classification Guidelines, Part 1: Classifying Waste” NSW EPA (2014).

4. CENVP REVIEW COMMENTS

Based on the review of the DSI (GCA, 2020) the following comments were made by HEC:

Initial Review Comment	Revised Report Comment
The report generally complies with the requirements of NSW EPA (2020).	No further comment
The soil sampling density does not comply with the requirements of NSW EPA (1995), however for a site this large, targeted sampling is sufficient to gain an initial screen of potentially contaminating areas.	No further comment
The sample depths were sufficient to provide an initial characterisation of the site, however it is agreed that further investigation around Pit 6 is warranted.	No further comment
The analytical suite was sufficient based on the historical site use and area of potential concern, however it is noted that the full analytical suite was not applied to all samples – justification for this should be included in the report.	Justification provided Comment closed
The groundwater assessment criteria should include the ANZG (2018) criteria. The groundwater data has not been compared to the HSL guidance values – further, the depth to groundwater is not stated and therefore comment regarding the correct depth criteria cannot be made at this stage.	ANZG (2018) have been applied. Comment closed
Phosphorus was detected in soil samples at concentrations “higher than average for east Australian soils”, GCA should state what this average value is and what the potential consequences are for future management of the site. GCA state the phosphorus levels can be remediated by planning crops that will maximise the phosphorus uptake. It is not discussed any further in the document if this remedial method is proposed/required.	This section has been revised with concentrations showed to be within average ranges. Comment closed
The soil samples were collected between 0.2 and 1.2m below ground and composited prior to analysis. The analytical results have been directly compared to the assessment criteria. This approach does not adhere to the requirements of S6 of NSW EPA (1995) which states that for composite samples, the assessment criteria should be divided by a factor ‘n’, where ‘n’ is equal to the number of samples that were used to make the composite. Additionally, composite samples must be collected from the same soil horizon and composited laterally, not vertically. GCA should provide more detail on the compositing process applied for this investigation.	Samples were discrete, not composited – GCA state the reference to composite sampling was an error. Comment closed.
The photograph in Image 10 of Appendix A describes the rock as shale – this photograph appears to be sandstone.	The photograph has been relabelled as siltstone. Comment closed
The areas of potential concern should be annotated on the figures – particularly the location of the above ground storage tank and the chemical storage areas.	The figure has been updated to show the areas of concern. Comment closed.
Pit 6 is described as containing “general solid waste”, further description of the material encountered should be included.	The description of the fill has been expanded to include brick, plastic, pipe and concrete. Comment closed.

The use of compositing is not an appropriate method for asbestos identification.

Samples were discrete, not composited – GCA state the reference to composite sampling was an error.

Comment closed.

The above comments comment have been appropriately addressed. It is agreed that subject to any requirements GCA outlined in the RAP, based on the significant amount of data collected at the site to date, it is likely the land can be made suitable for the proposed use. However should any further contamination be identified during the GCA recommended data gap investigation to be completed following demolition of site structures, then further assessment/management/ remediation may be required.

I trust this letter meets your requirements at this stage.

Yours Sincerely

Toby Scrivener

Principal Environmental Engineer, CEnvP – Site Contamination Specialist (No. SC41141)



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Encl.:

Attachment 1: Review of Report With Respect to NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Sites.

ATTACHMENT 1: Review of Detailed Site Investigation Report (GCA, August 2020)

Report section	Required information	Included
Document control	Date, version number, author and reviewer (including certification details) and who commissioned the report	<input checked="" type="checkbox"/>
Executive summary	Background	<input checked="" type="checkbox"/>
	Objectives of the investigation	<input checked="" type="checkbox"/>
	Scope of work	<input checked="" type="checkbox"/>
	A summary of key findings, observations and sampling results (if available)	<input checked="" type="checkbox"/>
	Summary of conclusions and recommendations	<input checked="" type="checkbox"/>
Objectives	The objectives of the investigation/report and the broader objectives for the site/investigation	<input checked="" type="checkbox"/>
Scope of work	Scope of work performed (and work not undertaken where relevant)	<input checked="" type="checkbox"/>
Site identification	Site identification and detail items from ASC NEPM Field Checklist 'Site information' sheet	<input checked="" type="checkbox"/>
Site history	Site history items from ASC NEPM Field Checklist 'Site information' sheet	<input checked="" type="checkbox"/>
Site condition and surrounding environment	Site condition and surrounding environment items from ASC NEPM Field Checklist 'Site information' sheet	<input checked="" type="checkbox"/>
Conceptual site model		<input checked="" type="checkbox"/>
Data quality objectives (if sampling is undertaken)		<input checked="" type="checkbox"/>
Sampling and analysis plan and sampling methodology (if sampling is undertaken)	Explain the rationale for any deviations from the plan	<input checked="" type="checkbox"/>
Quality assurance/quality control data evaluation (if sampling is undertaken)		<input type="checkbox"/>
Field and analytical results (if sampling is undertaken)	Summary of previous results, if applicable	NA
	A table(s) of analytical results that:	
	shows all essential details such as sample identification numbers and sampling depth	<input checked="" type="checkbox"/>
	shows assessment criteria	<input checked="" type="checkbox"/>
	highlights all results exceeding any assessment criteria	<input checked="" type="checkbox"/>
	Summary/discussion of the analytical results table	<input checked="" type="checkbox"/>

Report section	Required information	Included
	Sample descriptions for all media where applicable (e.g. soil, sediment, surface water, groundwater, soil vapour, ground gas, indoor air and biota)	<input checked="" type="checkbox"/>
	Test pit or bore logs (well construction details where appropriate for example groundwater level expressed in Australian height datum)	<input checked="" type="checkbox"/>
	Site plan showing all sample locations	<input checked="" type="checkbox"/>
	Site plan(s) showing the extent of soil and groundwater contamination (if known)	NA
Conclusions and recommendations	Summary of all findings and discussion of results	<input checked="" type="checkbox"/>
	Conclusions addressing the stated objectives	<input checked="" type="checkbox"/>
	Assumptions used in reaching the conclusions	<input type="checkbox"/>
	Extent of uncertainties in the results (quantified where possible)	<input type="checkbox"/>
	Recommendations for further work (if appropriate)	<input checked="" type="checkbox"/>