

ENARES Pty Ltd
380 Victoria Place,
Gladesville NSW 2047
Attention: Matthew Hundleby

Delivery by email: matt@gbmarina.com.au

Dear Matthew

Re: Interim Audit Advice No.1 - Gladesville Bridge Marina Development

Introduction and Objective

As a NSW Environment Protection Authority (EPA) accredited Contaminated Sites Auditor, I am conducting an Audit in relation to the subject site. This initial review has been undertaken to provide my opinion on the remediation and management framework proposed during redevelopment of the Gladesville Bridge Marina.

The site is proposed for redevelopment which will consist of construction of new floating berths and swing moorings, demolition of the existing slipway rails, and creation of car parking spaces within the slipway. The concrete base of the slipway will remain undisturbed.

A development application (DA2019/0380) was submitted to City of Canada Bay Council (Council) for approval of the proposed redevelopment.

Correspondence from NSW EPA (DOC20/20118 dated 14 February 2020) following assessment of documents provided with the development application requested the following:

"The applicant should engage a NSW EPA accredited Site Auditor to audit all relevant reports regarding contamination and sediment management on the site and to obtain a Site Audit Statement which must be submitted to the EPA. The Site Audit Statement submitted to the EPA must certify that the site can be made suitable for the proposed use if the site is remediated or managed subject to the plan specified on the Site Audit Statement."

The Supplementary Report on Contamination Investigation states that remediation is not recommend (sic). A Site Auditor should be engaged to determine if these recommendations are valid. The Consent Authority cannot approve a Development Application under Clause 7 State Environmental Planning Policy 55 Remediation of Land unless it is satisfied the site is suitable or can be made suitable. A Site Auditor is recommended to assist Council in coming to that conclusion where contrary information is provided."

The overall objective of the Audit is to address these requirements. This initial review of existing reports has been completed to confirm whether I agree in principle with the proposed remediation and management framework.

Date 8 May 2020

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Project No. 318000976

Scope of Review

I have reviewed the following documents which were submitted with the development application:

- 'Contamination Investigation, Alternations and Additions to the Gladesville Bay Marina, 380 Victoria Place, Drummoyne NSW 2047', Zoic Environmental Pty Ltd (Zoic), 30 September 2019 (*the CI*)
- 'Waste Management Plan', SLR Consulting Australia Pty Ltd (SLR), 4 October 2019
- 'SEPP 33 Hazardous and Offensive Development Report', GHD Pty Ltd (GHD), 8 October 2019
- 'Supplementary Report on Contamination Investigation', Marine Pollution Research Pty Ltd (MPR), 9 October 2019 (*the Supplementary CI*)
- 'Noise Impact Assessment of Proposed Alterations and Additions', Pulse Acoustic Consultancy Pty Ltd (Pulse Acoustic), 15 October 2019
- 'Ecology Assessment Report', MPR, 16 October 2019 (*the Ecology Assessment*)
- 'Environmental Impact Statement, Designated Development Application, Alterations and Additions, 380 Victoria Place, Drummoyne', Ethos Urban, 19 December 2019
- 'Preliminary Construction and Environment Management Plan, Alterations and Additions to the Gladesville Bridge Marine', SMC Marine Pty Ltd (SMC Marine), 21 October 2019
- 'Stormwater Management Report', Royal HaskoningDHV, 22 October 2019
- 'Sediment Management Report', Royal HaskoningDHV, 22 October 2019
- 'Water Management Report' GHD, 24 October 2019.

Site Details

The site details are as follows:

Street address:	380 Victoria Place, Drummoyne NSW 2047 (Attachment 1)
Identifier:	Lot B DP401843 (western portion of site) Lot 1 DP430123 (central portion of site) Lot 1 DP549352 (eastern portion of site)
Local Government:	City of Canada Bay Council
Owner:	ENARES Pty Ltd
Site Area:	940 m ²
Zoning:	R3 - Medium Density Residential (Canada Bay Local Environmental Plan 2013)

The site layout is shown on Attachment 2.

Surrounding Land Use

The site is located within an area of residential land use. The surrounding site use includes:

North-East: Paramatta river

South-East: Residential properties

South-West: Victoria Place with residential property beyond

North-West: Access driveway with Victoria Place, recreational land and Parramatta River beyond

Proposed Redevelopment

The redevelopment proposal includes alterations and additions to the existing Marina floating berths, shore-based maintenance facilities and car parking, including:

- Removal of 29 swing-moorings and retention of 15
- Reconfiguration of the marina berth layout
- Construction of 65 new floating berths of varying sizes, increasing from a total of 50 to 115 floating berths
- Cessation of slipway activities and demolition of slipway rails
- Construction of eight additional car parking areas within the former slipway.

The demolition activities proposed for the existing ground level are shown on Attachment 3.

Site History

The CI states that historical aerial photographs indicate that the eastern portion of the site comprised reclaimed land in 1930, which was mostly removed by 1943, then reclaimed again by 1961. A site building and potential slipway are visible in site photographs dating back to 1961.

A review of the Dangerous Goods Records for the site indicates that two underground storage tanks (USTs), of ~2,300 L volume, were decommissioned and filled with sand in 1994, and removed from the site in 2004. The USTs had previously stored petrol. A schematic drawing indicates the USTs were adjacent to Victoria Place, with two pipelines running beneath the boatshed to the jetty. The Dangerous Goods Records indicated the vent lines were filled with cement in 1996, and that the dip and bowser lines had previously been removed.

Summary of Site Assessment

During the CI, soil samples were collected from five boreholes across the site. Three grab sediment samples were collected from the base of the slipway and from the cove to the immediate north of site (within Parramatta River). Two groundwater wells were installed and sampled.

During the Ecology Assessment of the marine flora and fauna of the seabed at the base of the slipway, on the rails of the slipway and on the seabed away from the slipway, sediment cores were collected from a further eight sites along the foreshore to the east and west of the slipway. Core depths were between 450 and 500 mm and were split to obtain surface and sub-surface samples.

Samples were analysed for the contaminants of concern identified in the CSM.

The data did not indicate significant soil or groundwater contamination. The CI concluded that there was a low likelihood that the former UST tank pit had any ongoing impact on soil or groundwater conditions on the site.

The sediment data indicated concentrations of TBT and metals exceeding ecological criteria in the immediate vicinity of the slipway and sediments of the cove to the north. The Supplementary CI noted that there were limitations to the shallow sediment samples collected by Zoic, including: the samples were grab samples from material accumulated onto the lower slipway from the river (rather than from slipway activities); samples were not analysed for silt fraction or total organic carbon fraction so cannot be correctly compared against guideline values; and samples were not analysed for dibutyl-tin (BDT) or monobutyl-tin (MBT).

The cove sediment contamination away from shore was generally in line with background sediment contamination levels for Port Jackson Estuary. The Ecology Assessment and Supplementary CI

concluded that the "...sediments do not present any risk to local marine biota provided they are left undisturbed".

Conceptual Site Model

The following table presents a conceptual site model (CSM) for the site based on information presented in the CI report.

Element of CSM	Consultant
Contaminant source and mechanism	Filling of reclaimed land and uncontrolled site fill: Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc), total recoverable hydrocarbons (TRHs), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene, xylene (BTEX), and asbestos.
	Boat repair works: Metals, TRH/BTEX, PAHs and Organotins (Tributyl-tin (TBT))
	Former UST tank pit: TRH, BTEX, Lead and PAHs
Potentially affected media	Site fill and natural soil Fill used for reclaimed land Groundwater beneath the site Foreshore sediment at, and down-gradient of, the site
Receptor identification	Human: - Current site users - Future site users - Neighbouring site users Ecological: - Parramatta River

The CSM is considered a reasonable representation of contamination at the site. Additional contaminants of concern related to the slipway include chlorinated hydrocarbons, BDT, MBT and other antifouling biocides (e.g. Irgarol, Chlorothalonil and Diuron).

The potentially complete source-pathway-receptor (SPR) linkages based on the proposed redevelopment are likely to be dermal contact and incidental ingestion of sediments impacted with TBT and metals (and potentially other biocides) by site users. The sediments would also present a risk to the local marine ecology if disturbed.

Soil, fill and groundwater were not found to be impacted at concentrations exceeding adopted guidelines, and therefore is unlikely to present a risk to site users based on the proposed redevelopment.

Terrestrial ecological was not identified as a receptor in the CSM, which is considered reasonable based on the distribution of contaminants (largely isolated to sediments) the current and proposed site layout (sealed with concrete hardstand). This may need to be considered further if redevelopment was to include areas of landscaping.

Summary of Discussion

The Supplementary CI stated that:

"Our site observations did not indicate any actual environmental harm at the site - there were burrows indicating benthic life, there is marine algae growing in close proximity and there is a small seagrass bed in close proximity that has been in this location for a number of years. That is, the plant and animal life is similar to that observed away from the immediate slipway site.

While some of the substances are toxic, persistent or bio-accumulative, they are contained at the site as undisturbed sediments to the extent that marine life is similar in the immediate locality to

marine life away from the site. Further, the contaminants are of the same class as contaminants that are wide spread throughout the estuarine habitats of the lower Parramatta River and upper Sydney Harbour estuary and are likely to be at similar concentration levels as at other slipways not deemed significantly contaminated land once toxicity of raw concentrations are considered in relation to silt fraction and total organic carbon concentrations.

There are no significant exposure pathways available to the substances in that the sediments are sub-tidal and confined to a highly restricted site at the bottom of a slipway, hemmed in by hardstands either side - making physical access for people or marine animals difficult and unlikely. Also, if required, access can be easily limited by appropriate fencing if that were actually deemed necessary.

The current uses of the land and of adjoining land include slipway activities that increase the risk of harm, but the proposal includes cessation of these activities.

The uses of the land and of adjoining land are being minimised by cessation of slipway activities thus decreasing the risk of harm from substances contained in the sediments to humans or the environment.

The patterns of contamination in sediments to the east and west of the slipway... indicate that the actual high contamination from the slipway usage is localised to the area of historical vessel wash water discharging directly into the waters and contaminants settling in the immediate vicinity of the slipway. Water quality assessments at locations where people may be in the water included copper as a representative contaminant, and this sampling did not indicate any migration from the contained sediments to the waters."

On this basis the Supplementary CI concluded:

"... the seabed sediments at the bottom of the slipway are contaminated with metals and organics including organotin. It is also concluded that these sediments are seabed sediments accumulated at the bottom of the slipway, continuous with the surrounding seabed, and there is not an isolated quantity of sediment lying on the slipway. It is also concluded that the contaminants are 'locked up' in the sediments and do not present any risk to local marine biota provided they are left undisturbed.

Accordingly, if these sediments were to be removed, this would simply provide a void in the existing seabed that would be rapidly refilled from collapse of the edge void walls and re-working of the inshore sediments by wind and wash to 'relevel' the seabed. This would lead to localised destabilisation of other contaminated sediments which would certainly result in large pulses of contaminants into the water column which could then result in adverse impacts to the local biota.

It is recommended that the preferred action is to leave the seabed sediments intact as per the recommendations of the MPR report [the Ecology Assessment] AND ensure low risk to human health by minimising the opportunity for contact with the sediments. This can be achieved by (a) only allowing marina personnel on the slipway (as it the present prohibition), (b) fencing off access to the lower slipway and/or (c) posting signage that access to the seabed from the slipway is not safe and is prohibited. This latter prohibition is also logical on purely physical grounds as the lower intertidal slipway supports algae growth that makes the slipway slippery. Signage to prevent access for slip- falls is required in any case.

On this basis, as the risk to human health and the risk of adverse impacts on local marine biota is minimised there is no requirement for a RAP [Remedial Action Plan]."

The opinion of the management of the Gladesville Bridge Marina should be sought with respect to the feasibility of ongoing passive management of sediments by restricting access to the lower slipway and associated sediments.

Auditor's Opinion

Based on the data reviewed and the nature of the proposed development (which involves retaining the concrete slipway in situ) and associated exposure scenarios, I agree that active remediation of the site and associated sediments is not required in association with the proposed redevelopment. The sediments on the lower slipway would be subject to passive management indefinitely, and therefore the Gladesville Bridge Marina should be consulted as to the feasibility and desirability of this outcome. They would also be responsible for managing the site and ensuring compliance with the requirements of an ongoing passive environmental management plan (EMP).

Sediments are to be managed during construction as per the various plans submitted with the development application. Subject to agreement to the approach by Gladesville Bridge Marina, an EMP should be prepared to manage potential risks to human health and the environment during any potential disturbance of contaminated sediments in the future. **Implementation of the EMP should be included as a condition of the development consent to ensure enforceability.**

I anticipate that the following process would address the Audit requirements:

- Preparation of an EMP for my review.
- Preparation of a Section B2 Site Audit Statement (SAS) and Site Audit Report (SAR) assessing whether the site can be made suitable for the proposed use subject to the EMP.

* * *

Consistent with the NSW EPA requirement for staged 'signoff' of sites that are the subject of progressive assessment, remediation and validation, I advise that:

- This advice letter does not constitute a Site Audit Report or Site Audit Statement.
- At the completion of the remediation and validation I will provide a Site Audit Statement and supporting documentation.
- This interim advice will be documented in the Site Audit Report.

Yours faithfully
Ramboll Australia Pty Ltd



Tom Onus
NSW EPA Accredited Auditor 1505

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Attachments:

1. Site Location
2. Current Site Layout
3. Proposed Ground Level Demolition

**LEGEND**

— Approximate Site Location

This product has been created to support the main report and is not suitable for other purposes. Image courtesy of Google Maps

Not to Scale

Figure 1: Site Location Plan

Site Address: 380 Victoria Place, Drummoyne NSW

Client: Gladesville Bay Marina Pty Ltd

Job Number: 18166

Date: September 2019

**LEGEND**

— Approximate Site Boundary

This product has been created to support the main report and is not suitable for other purposes. Image courtesy of Google Maps

0m 10m

Scale indicative only

Figure 2: Site Layout

Site Address: Site Address: 380 Victoria Place, Drummoyne

Client: Gladesville Bay Marina Pty Ltd

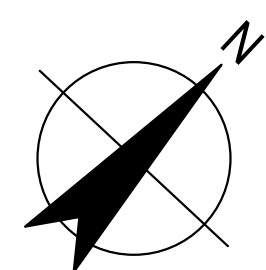
Job Number: 18166

Date: September 2019



DEMOLITION PLAN - GROUND
SCALE 1 : 100

A	ISSUE FOR DEVELOPMENT APPLICATION	SG	SG	JN
No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Master	Project Director
				Date



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Drafting	D.CHEONG
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Approved (Project Director)	J.NICHOLLS	
Date		

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Designer S.GUO

Design	D.CHEONG
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This Drawing must not be
used for Construction unless
signed as Approved

Client	GLADESVILLE BRIDGE MARINA
Project	380 VICTORIA PLACE, DRUMMOYNE
Title	DEVELOPMENT APPLICATION DEMOLITION PLAN - GROUND

Original Size **A1** Drawing No: **21-27558-A050**

Rev: **A**