



Nelly Bay Harbour Maintenance Dredging Project

Sediment Investigation Report

Townsville City Council

Prepared by:

SLR Consulting Australia

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Basis of Report

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Acronyms and Abbreviations

ANCE	Acid neutralising capacity equivalent
ASS	Acid sulfate soils
ASSMP	Acid sulfate soils management plan
BTEXN	Benzene, toluene, ethylbenzene, xylene, naphthalene
COC	Chain of custody
CoPC	Contaminants of potential concern
CRS	Chromium reducible sulfur
DQO	Data quality objectives
GPS	Global positioning system
LAT	Lowest astronomical tide
LOR	Limit of reporting
MBO	Monosulfidic black ooze
NATA	National Association of Testing Authorities
OCP	Organochlorine pesticide
OPP	Organophosphorus pesticide
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PSD	Particle size distribution
PVC	Polyvinylchloride
QA/QC	Quality assurance and quality control
RIS	Reduced inorganic sulfur
RPD	Relative percentage differences
SAP	Sampling and analysis plan
SMEC	SMEC Australia Pty Limited
SLR	SLR Consulting Australia Pty Ltd
TBT	Tributyltin
TCC	Townsville City Council
TRH	Total recoverable hydrocarbon



1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) were engaged by Townsville City Council (TCC) to undertake an updated contaminated land and acid sulfate soil (ASS) investigation for proposed sediment to be dredged. The sampling was undertaken within the dredging maintenance areas (the Site) within Nelly Bay, Magnetic Island, Townsville, Queensland (QLD). The location of the Site is presented in Figure 5-1 (Section 5.1).

It is understood, through discussions with TCC and review of previous sediment sampling conducted by SMEC (2022), that the investigation is required to facilitate future dredging maintenance at the Site. Dredging in the harbour is expected to begin with an initial campaign in 2027, removing up to 15,000 m³ of sediment material and requires characterisation for future management with respect to contamination and ASS.

This sediment investigation report provides an assessment of works completed and a summary of the potential contaminants present within the sediment at the Site. The findings of the investigation will inform the potential for land-based management and re-use and/or offshore sea disposal.

1.1 Objectives

The objectives of the investigation were to:

- Undertake a preliminary assessment of sediment within the Site in accordance with the Sampling and Analysis Plan (SAP) (SLR 2025) and in accordance with relevant standards and guidelines (refer Section 1.2).
- Analyse the sediment within the Site to an approximate depth of -2.566 metres (m) lowest astronomical tide (LAT) as per the harbour approved design depth for a range of physical and chemical parameters, and compare against applicable guideline criteria.
- Assess the adequacy and completeness of all information gathered.
- Provide conclusions and recommendations based on the findings of this assessment for potential land-based management and re-use and/or offshore sea disposal under the *Environment Protection (Sea Dumping) Act 1981*.



1.2 Guidelines and legislation

This investigation has been prepared in general accordance with the following guidelines and legislation:

- *Australian and New Zealand Guidelines (ANZG) (2018) Toxicant Default Guideline Values for Sediment Quality, Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, updated September 2019.
- Decision tree and explanatory note for the assessment of tributyltin (TBT) in dredge spoil, Department of Agriculture, Water and the Environment, 2021).
- *Department of the Environment, Water, Heritage and Arts, National Assessment Guidelines for Dredging 2009* (NAGD, 2009).
- *Department of Resources and Department of Environment, Science and Innovation, Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines v5.1* (2024) (DoR and DESI, 2014) (QASSTM).
- *National Environment Protection Council, National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) December 1999 (2013 Amendment)* (ASC NEPM).
- *National Acid Sulfate Soils Guideline: Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil management* (NASSG) (Commonwealth of Australia, 2018).
- *PFAS National Environmental Management Plan (PFAS NEMP) (V3.1)* (Heads of EPA Australia and New Zealand 2025).
- *Water Quality Australia, National Acid Sulfate Soils Guidance, Guidelines for the Dredging of Acid Sulfate Soils and Sediments and Associated Dredge Spoil Management*, June 2018 (WQA 2018).

1.3 Scope of works

A Sediment Sampling and Analysis Plan (SLR 2025) (SAP) was developed to guide the preliminary sediment investigation as per NAGD (2009). The scope of works undertaken for this investigation included:

- Review of previous sediment investigations completed within the Site (refer Section 3.0).
- Review of the existing environmental setting for the Site, including climate, topography and elevation, sediment and geology.
- Collection of sediment samples from six (6) sample locations to characterise dredged sediment for potential contamination.
- Sediment sample analysis for contaminants of potential concern (CoPC) by a National Association of Testing Authorities (NATA) Accredited Laboratory with appropriate rates of quality control (QC) and quality assurance (QA) samples collected.
- Provide conclusions and recommendations based on the findings of the investigation to inform potential land-based re-use and/or offshore sea disposal of proposed dredged material.



The SAP (SLR 2025) proposed sediment sampling at six (6) locations within the Site, however the vibracore encountered refusal at several locations in proximity to SED01 which prevented sediment sampling. Further details on the implications of the deviation from the proposed scope of works is provided in Section 5.2.

2.0 Site setting

2.1 Site details

The Site details are described as per Table 2-1.

Table 2-1 Site details

Detail	Comment
Address	Nelly Bay Harbour, Magnetic Island, QLD
Area	TCC controlled portions of Nelly Bay which require dredging maintenance consist of seven Lots occupying a total area of 61,078 m ² . The depths of maintenance dredging within the Site will be informed by a hydrographic survey.
Lot details	Lot 101 SP139222, Lot 700 SP229753, Lot 701 SP159770, Lot 702 SP159770, Lot 703 SP229753, Lot 704 SP159770, Lot 705 SP229753
Maintenance Responsibility	Townsville City Council
Current land use	Harbour for commercial and personal boats, with boat ramp access
Surrounding land use	North: Commercial and residential land use (hotels, restaurants and shops) and Magnetic Island National Park South: Magnetic Island heli-pad, Magnetic Island Reef and Great Barrier Reef East: Nelly Bay Ferry Terminal, commercial and residential land use (hotels, supermarket and shops). West: Nelly Bay Playground, commercial and residential land use (shops and hotels).

2.2 Existing environment

Summary of surrounding environmental settings in detailed in Table 2-2.

Table 2-2 Existing environment

Site aspects	Details
Climate	A review of climate data for the period 1940 to 2025 from the Townsville Aero (032040) weather station, approximately 13 km west of the Site, identified the following (BoM, 2025): - Mean annual maximum temperature is 29°C. - Mean annual minimum temperature is 19.9°C. - Mean annual rainfall is 1,133.9 mm.
Topography and elevation	The Site elevation varies between approximately 0.0 m LAT and 4.2 m LAT based on a review of hydrographic data provided by TCC.



Process	Response
Step 3: Identify the Inputs to the Decision	The inputs required to investigate the decision are: • Site history and review of provided previous report (SMEC, 2022) • Relevant background data obtained during previous investigations • Field methods, such as sampling, sample storage and preservation, laboratory methods, QA/QC • Media to be sampled, location of sampling and target area • CoPC • Adopted assessment criteria • Field data and results from the laboratory analysis.
Step 4: Define the Boundaries of the Study	The vertical boundary of the Site will generally extend to the top 1.0 m of the sediment bed. The spatial boundary of the Site is presented in Figure 5-1 (Section 5.1).
Step 5: Develop a Decision Rule	The investigation will be completed through comparison of concentrations against screening level guidelines specified in NAGD (2009), NASSG (2018), ASC NEPM and PFAS NEMP V3.1 (2025).
Step 6: Specify Tolerable Limits on Decision Errors	Acceptance limits on field and laboratory data collected for this investigation will be in accordance with NAGD (2009), NASSG (2018), ASC NEPM and PFAS NEMP V3.1 (2025).
Step 7: Optimise the Design for Obtaining Data	Sampling strategy was developed in general accordance with relevant guidelines specified in Section 1.2 and the SLR SAP (2025). Samples are to be analysed by a National Association of Testing Authorities (NATA) Accredited Laboratory within approved sample holding times.



4.2 Data quality indicators

The data quality indicators (DQIs) for the assessment are presented in Table 4-2.

Table 4-2 Data quality indicators

DQI	Field	Laboratory	Acceptability limits
Completeness	- Sediment identified to be potentially impacted by contamination pose a potential risk to human health and the environment - Appropriate sampling procedures to be used as per guidelines in Section 1.2 - Experienced field team to undertake the investigation - Correct documentation to be completed (e.g. chain of custodies)	- All required samples analysed in accordance with the SAP, where practicable - Appropriate methods employed in accordance with NAGD (2009), ASC NEPM, NASSG (2018) and PFAS NEMP (2025) - Appropriate LORs - Sample documentation correct (e.g. chain of custodies, sample receipt notification etc) - Sample holding times in compliance	As per ASC NEPM and PFAS NEMP V3.1 (2025).
Comparability	- Correct sample procedures used at each location - Experienced field team, led by the suitably qualified person - Same type (medium, volume and sampling technique) of samples collected in accordance with laboratory requirements	- Same analytical methods used - Appropriate LORs - Samples submitted to the same NATA accredited laboratory - Analytical data is presented in the same unit	As per ASC NEPM and PFAS NEMP V3.1 (2025).



DQI	Field	Laboratory	Acceptability limits
Representativeness	- Appropriate sediment sampled as described in Section 5.0 - Samples collected must be homogenous and appropriately collected, handled, stored and preserved to reflect the field conditions	All required samples analysed in accordance with the SAP (SLR 2025)	As per ASC NEPM and PFAS NEMP V3.1 (2025).
Precision	- Appropriate sample procedure used at each location - Collection of appropriate quality assurance and quality control (QA/QC) samples, as per ASC NEMP and PFAS NEMP V3.1 (2025).	Analysis of: - Field duplicate samples (1 per 20 or 1 per 10 samples collected) - Trip blanks - Laboratory duplicate samples	Relative percent deviation (RPD) of 30-50%. - RPDs may exceed this range where: - Results are <10x the LOR, or - Results are <20x the LOR and the RPD is <50%
Accuracy	- Sampling procedures appropriate and complied with - Collection of appropriate QA/QC samples	Analysis of: - Trip/field blanks - Method blanks - Laboratory surrogate spikes - Laboratory control samples - Reference material - Matrix spikes - Matrix spike duplicates - Surrogate spikes	Acceptance limit between 50 to 150% for percent recovery of laboratory control samples, matrix spikes and surrogate spikes. All others have an acceptance limit of non-detect

5.0 Field investigation program

5.1 Sampling methodology

The sampling methodology undertaken for the sediment sampling investigation is presented in Table 5-1.



Table 5-1 Sediment sampling methodology

Activity	Details
Sediment sampling density	A total of 12 primary sediment samples, from the five completed sample locations, were collected within the Site to characterise approximately 15,000 m³ of dredged sediment. Sediment samples were collected at intervals of 0.5 m within the top 0.5 m of the sediment bed and at 1.0 m intervals thereafter until the target depth of -2.566m LAT or refusal.
Sediment sampling methodology	Sediment samples were collected in-situ using a vessel mounted vibracore. Core samples were sufficiently homogenised in a stainless steel bowl, prior to collection into laboratory supplied containers using either a small trowel or new nitrile gloved hand. All sediment cores were logged, with the depth from water surface to top of sediment recorded.
Sample logging	Approximate sample locations were recorded with a handheld Global Positioning System (GPS) unit, and sediment photographs taken.
Quality control	Two quality control intra laboratory field duplicates and two inter laboratory field duplicates were collected for PFAS. One quality control intra laboratory field duplicate and one inter laboratory field duplicate sample was be collected for all other CoPC. One quality control intra laboratory field duplicate sample was collected for ASS. A single trip blank was collected at a rate of one per batch of primary samples.
Laboratory analysis	Primary samples were submitted Eurofins (primary laboratory) and ALS Environmental (secondary laboratory) under chain of custody for analysis of the following CoPC: • ASS - o pH_(F) and pH_(FOX) - o CRS (3 primary samples only) • Metals/metalloids (Sb, As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn) • PAH • PCB • PFAS • TBT • OCP/OPP



Activity	Details
	• Moisture content • Total organic carbon • Particle size distribution (PSD).



5.2 Deviation from the SAP

The SAP (SLR 2025) proposed sediment sampling at 6 locations within the Site to characterise approximately 15,000 m³ of sediment proposed for dredging. During the sediment investigation, the vibracore encountered refusal at several locations in proximity to SED01 which prevented sediment sampling.

The sediment surface conditions at SED01 were observed as compacted gravel material with immediate resistance to vibracoring. As a result, only 5 sediment sampling locations included sediment sampling for laboratory analysis.

Previous sediment sampling completed by SMEC (2022) in proximity to SED01 also encountered refusal 0.45 m below the sediment bed. The SMEC (2022) report findings in proximity to SED01 was reviewed to understand if this area within the harbour may present a historical contamination risk. No exceedances of the adopted assessment criteria were identified.

As outlined in Table 6 of the NAGD (2009), seven (7) sampling locations are required to characterise 15,000 m³ of sediment; however, the NAGD (2009) permits a 50% reduction in sampling density where sufficient recent and relevant data support a 'probably clean' or 'probably contaminated classification'. Accordingly, reliance on the findings of the SMEC (2022) investigation reduced the minimum requirement to four (4) locations, and the five (5) locations sampled in 2025 by SLR therefore exceeded the NAGD (2009) requirement.

Refusal was also encountered at SED02 on stiff clays at approximately 0.5 m below the sediment bed which prevented collection of a sample at 1.0 m below the sediment bed. This sample was however surplus to requirements due to the depth of sediment samples required at SED02 to reach target depth (refer Section 6.1). Furthermore, the contaminant concentrations at SED02 within the top 0.5 m of sediment did not indicate potential for contamination within deeper layers of sediment.



- o Default guideline values (DGV) were considered to provide a conservative and general screen of sediment.
- o Guideline value high (GV-High) typically represents the concentration above which adverse biological effects become more likely.

6.0 Investigation findings

6.1 Sampling observations

Sediment sampling was undertaken by an experienced SLR environmental scientist under the guidance of a Suitably Qualified Person (SQP) under the *Environmental Protection Act 1994*. Sediment samples were collected using a vibracoring rig and operated by a licenced contractor, Rhino Dive.

A summary of the sediment samples collected at each location, target depth and sediment observations are presented in Table 6-1. Sediment logs are presented in Appendix B and a photolog of the sediment cores are presented in Appendix C.

Table 6-1 Sediment sample observations

Location	Hydrographic depth (m LAT)	Target depth (m LAT)	Required depth into sediment (m below sediment bed)	Samples analysed sample from (m below sediment bed)	Sediment observations
SED01	2.7	2.56	0.14	Nil	Compacted gravel material encountered. Refusal with vibracore.
SED02	2.6	2.56	0.04	0.5	Black very stiff sandy clay. Refusal at 0.5 m below sediment bed to the stiff clays.
SED03	0.6	2.56	1.96	0.5,1.0,2.0	Brown fine to coarse loose sand. Sand becoming more compact with increasing depth. Mild organic odour observed at 2.0 m.
SED04	2.2	2.56	0.36	0.5,1.0	Black very stiff sandy clay. Mild organic odour present from 0.5 m to 1.0 m.



Location	Hydrographic depth (m LAT)	Target depth (m LAT)	Required depth into sediment (m below sediment bed)	Samples analysed sample from (m below sediment bed)	Sediment observations
SED05	2.0	2.56	0.56	0.5,1.0	Black very stiff sandy clay. Strong organic odour present at 0.5 m. Refusal at 0.5 m below sediment bed on stiff clays.
SED06	0.2	2.56	2.36	0.5,1.0,2.0,3.0	Black fine grained sandy clay with some rounded medium gravel present. Strong sulphur odour present from 0.5 m to 3.0 m.



The CRS results indicate all sediment samples analysed exceed the 18 mol H⁺/tonne action criterion for net acidity. The net acidity of the sediment from SED03 and SED04 ranged between 31 mol H⁺/tonne and 290 mol H⁺/tonne (SED04_0.5). The analytical findings from the ASS CRS analysis indicate PASS is present within the sediment at SED03 and SED04.

Liming rates were derived for each sample to identify the approximate quantity of lime required to neutralise a dry sediment material and ranged between 2.3 kg CaCO₃/t to 22 kg CaCO₃/t.

Excess acid neutralising capacity equivalent (ANCE) was identified in all three sediment samples and ranged from 0.26 % CaCO₃ to 22 % CaCO₃.

Previous sediment sampling completed at the Site by SMEC (2022) included ASS CRS analysis of two sediment samples from NBH03, near the top of Gustav Creek and in the approximate same location as SLR sample SED03 (refer Figure 5-1). PASS was identified in the sample collected from 1.0 m bgl.

The PASS findings by SMEC (2022) near the top of Gustav Creek correlate with the findings of this investigation with SED03 and SED04 ASS CRS analysis indicating the presence of PASS. In accordance with the NASSG (2018), net acidity of any ASS material equal to or exceeding the action criterion will require a detailed ASS Management Plan prior to disturbance and will apply to sediment proposed for dredging in the areas of SED03 and SED04.



6.2.3 Contamination findings

A total of 18 sediment samples, including three (3) pairs of intra- and inter-laboratory field duplicate samples, were collected and scheduled for laboratory analysis. The CoPC are summarised in **Table 5-1**, with analytical results screened against the adopted NAGD (2009), ASC NEPM and PFAS NEMP (2025) assessment criteria in Section 5.4.1.

No sediment samples exceeded the adopted assessment criteria. PAH, PCB, PFAS, TBT and OCP/OPP were not detected above the laboratory LOR. A summary of CoPC detected above the laboratory LOR are presented in Table 6-2. A summary of analytical findings is presented in Appendix D. Laboratory certificates are presented in Appendix F.

Table 6-2 Summary of analytical results above the laboratory LOR

CoPC	Number of samples analysed	Number of samples above LOR	Minimum concentration (mg/kg)	Maximum concentration (mg/kg)
Metals/metalloids				
Arsenic	13	10	2	7.7
Chromium (III & VI)	13	11	<5	28
Copper	13	11	<5	26
Lead	13	11	<5	15
Nickel	13	8	<5	15
Zinc	13	13	5.9	46
BTEXN				
Benzene	13	3	0.1	0.1
TRH				
TRH C16-C34 (F3)	13	1	<100	240
TRH C34-C40 (F4)	13	1	<100	150
TRH C10-C40 (Total)	13	1	<100	390



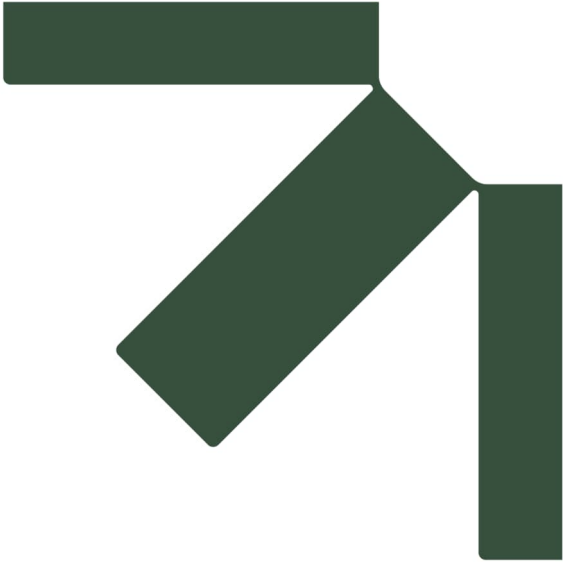
- Based on the ASS analysis as part of this investigation and the SMEC (2022) investigation, sediment in close proximity to SED03 and SED04, near top of Gustav Creek, is indicative of PASS. In accordance with the NASSG (2018), net acidity of any ASS material equal to or exceeding the action criterion will require a detailed ASS Management Plan (ASSMP) prior to disturbance for land-based placement of dredge material.
- The preliminary sediment sampling within the Site did not exceed the adopted NAGD (2009), ASC NEPM and PFAS NEMP (2025) assessment criteria. The findings were generally consistent with the previous site assessment completed by SMEC (2022), which indicates the sediment is suitable for land-based re-use and/or offshore sea disposal in accordance with the relevant guideline criteria for non-ASS conditions. As noted above, based on the PASS results sediment dredged from the Site should be managed under an ASSMP for land-based placement of dredge material.
- Any dredging works completed within the Site will require the development of a Construction Environmental Management Plan (CEMP), or similar, and include procedures for assessing and managing potentially contaminated sediment, including ASS. A suitable qualified person should be commissioned to assess potential impacts and provide management strategies, if required.



from the work and any report prepared as a result and the cost of our services is such that SLR cannot guarantee that all issues of concern/contamination have been identified.

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Appendix A Previous Investigation (SMEC 2022)

Nelly Bay Harbour Maintenance Dredging Project Project

Sediment Investigation Report

Townsville City Council

SLR Project No.: 623.030475.00002

18 August 2026

Table 1- Metals, TRH, BTEXN



			Metals															
			Aluminium	Antimony	Arsenic	Cadmium	Chromium (II+VI)	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Vanadium	Zinc
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			50	0.5	1	0.1	1	0.5	1		1	10	0.01	1	0.1	0.1	2	1
NAGD 2009 Screening Levels				2	20	1.5	80		65		50		0.15	21		1		
NEPM 2013 Table 1A(1) HILs Rec C Soil					300	90		300	17,000		600	19,000	80	1,200	700			30,000
NEPM 2013 Table 1A(1) HILs Res A Soil					100	20		100	6,000		300	3,800	40	400	200			7,400
NEPM 2013 Table 1B(5) Generic EIL - Areas of Ecological Significance					40													
Field ID	Date	Lab Report Number																
NBH01/0.0-0.45	19/05/2022	EB2214480	7,000	<0.50	6.16	<0.1	13.2	4.8	50.2	11,600	14.6	144	0.03	7.6	0.5	0.1	20.3	67.8
NBH02/0.0-0.38	19/05/2022	EB2214480	3,380	<0.50	2.63	<0.1	5.6	2.1	21.8	5,830	8.2	72	0.01	3.2	0.2	<0.1	9.4	31.8
NBH02/0.8-0.76	19/05/2022	EB2214480	3,820	<0.50	3.00	<0.1	5.4	2.4	11.0	6,100	10.1	80	0.02	3.3	0.3	<0.1	10.3	26.3
NBH03/0.0-0.5	19/05/2022	EB2214480	2,660	<0.50	1.37	<0.1	3.7	1.5	10.8	5,470	8.2	40	<0.01	2.0	0.2	<0.1	9.6	24.7
NBH04/0.0-0.6	19/05/2022	EB2214480	6,020	<0.50	4.70	<0.1	9.8	3.6	28.7	11,100	15.0	119	0.02	5.7	0.5	<0.1	18.6	48.4
NBH04/0.6-1.0	19/05/2022	EB2214480	1,180	<0.50	<1.00	<0.1	<1.0	<0.5	1.1	1,100	2.3	<10	<0.01	<1.0	0.1	<0.1	<2.0	2.6
NBH05/0.0-0.5	19/05/2022	EB2214480	7,220	<0.50	7.04	<0.1	14.5	4.3	38.6	11,600	13.4	180	0.02	8.0	0.6	<0.1	21.9	56.2
NBH05/0.5-0.7	19/05/2022	EB2214480	4,570	<0.50	4.26	<0.1	7.2	2.8	9.7	7,200	9.2	131	0.01	4.2	0.4	<0.1	13.4	22.5
NBH06/0.0-0.6	19/05/2022	EB2214480	5,420	<0.50	4.10	<0.1	11.1	3.2	12.0	8,480	9.2	154	0.01	6.2	0.4	<0.1	17.5	31.0
NBH06/0.6-1.2	19/05/2022	EB2214480	4,650	<0.50	3.41	<0.1	9.8	2.7	10.9	7,380	8.1	151	0.01	5.4	0.4	<0.1	15.6	25.5

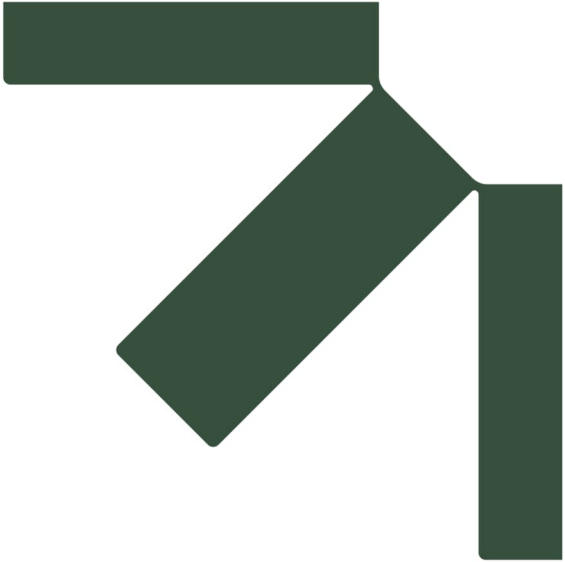
Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil

Table 1- Metals, TRH, BTEXN



			BTEX							TRH						TPH				
			Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.2	0.2	0.2	0.2	0.2	0.5	0.2	3	3	3	3	5	3	3	3	3	5	3
NAGD 2009 Screening Levels															550					550
NEPM 2013 Table 1A(1) HILs Rec C Soil																				
NEPM 2013 Table 1A(1) HILs Res A Soil																				
NEPM 2013 Table 1B(5) Generic EIL - Areas of Ecological Significance																				
Field ID	Date	Lab Report Number																		
NBH01/0.0-0.45	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	36	17	53	<3	<3	23	21	44
NBH02/0.0-0.38	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	21	10	31	<3	<3	14	12	26
NBH02/0.8-0.76	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	16	10	26	<3	<3	9	11	20
NBH03/0.0-0.5	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	242	176	418	<3	<3	170	169	339
NBH04/0.0-0.6	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<12	82	73	155	<3	<6	45	67	112
NBH04/0.6-1.0	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	13	10	23	<3	<3	<6	11	11
NBH05/0.0-0.5	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<12	109	78	187	<3	<6	68	84	152
NBH05/0.5-0.7	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	21	12	33	<3	<3	11	14	25
NBH06/0.0-0.6	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<12	87	46	133	<3	<6	62	51	113
NBH06/0.6-1.2	19/05/2022	EB2214480	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<3	<3.0	<6	41	22	63	<3	<3	26	25	51

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Rec C Soil
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil



Appendix B Sediment Logs

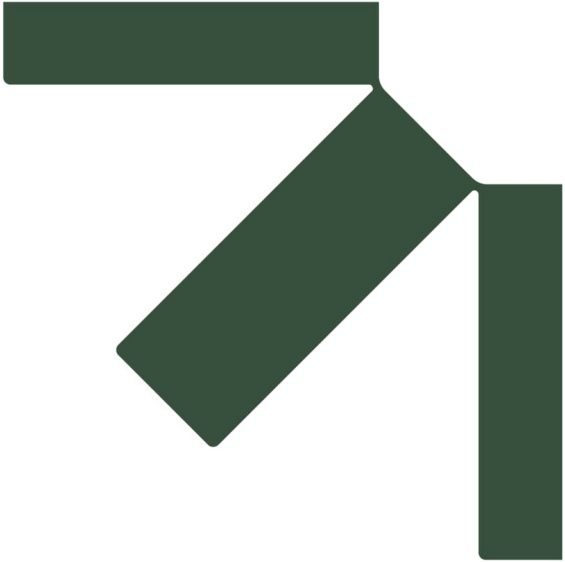
Nelly Bay Harbour Maintenance Dredging Project Project

Sediment Investigation Report

Townsville City Council

SLR Project No.: 623.030475.00002

18 August 2026



Appendix C Sediment Core Images

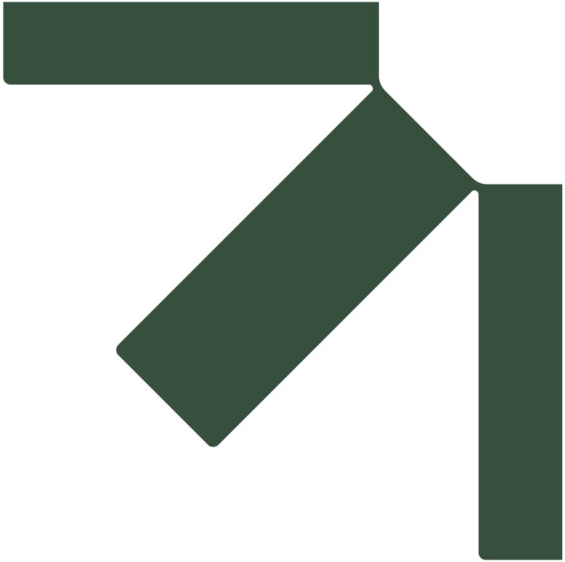
Nelly Bay Harbour Maintenance Dredging Project Project

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Appendix D Analytical Results Summary Tables

Nelly Bay Harbour Maintenance Dredging Project Project

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