



Chemical and Ecological Monitoring of Mermaid Sound

2025 Monitoring Report



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An O2Marine company



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Acronyms and Abbreviations

Term	Full term
ALS	Australian Laboratory Service
APHA	American Public Health Association
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)
ANZECC & ARMCANZ	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
BTEXN	Benzene, Toulene, Ethylbenzene, Xylene and Naphthalene
CC	Cowrie Cove
ChEMMS	Chemical and Ecological Monitoring of Mermaid Sound
CoC	Chain of Custody
COPC	Contaminants of Potential Concern
CZ	Conzinc Bay
EDTA	Ethylenediaminetetraacetic acid
DGVs	Default guideline values
FIMS	Flow Injection Mercury System
FSANZ	Food Standards Australia New Zealand
GEL	Generally Expected Level
GIS	Geographic Information System
HC	Hearson Cove
ICP-AES / ICPAES	Inductively Coupled Plasma Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
KB	King Bay
KBSB	King Bay Supply Base
KGP	Karratha Gas Plant
LNG	Liquefied Natural Gas

LoR	Limits of Reporting
NATA	National Association of Testing Authorities
NB	North Burrup
NDVI	Normalised Difference Vegetation Index
NEC	North East Creek
NIR	Near Infrared
NNB	No Name Bay
NNBD	No Name Bay Drain
NNBDU	No Name Bay Drain Upstream
M3EM	Mavic 3 Enterprise Multispectral
MDEA	Methyldiethanolamine
MVI	Minimum Vegetation Index
NWS	North West Shelf
OTP	Onshore Gas Treatment Plant
PAH	Polycyclic Aromatic Hydrocarbons
PFAS	Per- and Polyfluoroalkyl Substances
QA/QC	Quality Assurance/Quality Control
QGIS	Quantum Geographic Information System
R	Reference site
RGB	Quantum Geographic Information System
RPAS	Remotely Piloted Aircraft System
SCB	Slug Catcher Beach
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UAV	Uncrewed Aerial Vehicle
USEPA	United States Environmental Protection Agency
WB	Withnell Bay
WC	Watering Cove
WDO	Wastewater Outfall
Woodside	Woodside Energy Ltd

Executive Summary

As part of long term monitoring of potential impacts on the surrounding environment from North West Shelf (NWS) onshore activities, and in support of a range of regulatory management requirements, Woodside Energy Ltd (Woodside) undertakes chemical and biological monitoring of the intertidal and subtidal environment adjacent to the Karratha Gas Plant (KGP) and King Bay Supply Base (KBSB) facilities. Reference sites along the Burrup Peninsula are also monitored.

The Chemical and Ecological Monitoring of Mermaid Sound (ChEMMS) monitoring program is a surveillance monitoring program that was initiated during 1985, that collects data on:

- Contaminant concentrations (e.g. metals, hydrocarbons) in samples of sediments, oysters and mud whelks on an annual basis,
- Mangrove health at selected sites on an annual basis by assessing species canopy cover, insect damage, tree health, dust coverage, phenology and by using the Normalised Difference Vegetation Index (NDVI),
- The impact of turbidity from shipping on corals through five-yearly video-graphic surveys, and
- Physical water quality of conductivity, temperature, dissolved oxygen and turbidity.

Monitoring for the ChEMMS program is undertaken at several sites including:

- Impact sites around KBSB, Wastewater Outfall (WDO) and KGP including; North East Creek (NEC), No Name Bay (NNB), No Name Bay Drain (NNBD), No Name Bay Drain Upstream (NNBDU) and Slug Catcher Beach (SCB).
- Reference sites Conzinc Bay (CZ^R), Withnell Bay (WB^R), Watering Cove (WC^R), Cowrie Cove (CC^R), King Bay (KB^R), North Burrup (NB^R) and Hearson Cove (HC^R).

The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) (a revision of the ANZECC/ARMCANZ 2000 guidelines) are used as the reference against the current reporting limits.

Chemical Monitoring – Subtidal Sediments

Subtidal sediments sampling has been conducted at 20 sites. Site locations and the type of chemical analysis undertaken are presented in Figure 2, Figure 3 and Table 1.

All metals and contaminants of potential concern (COPC) remained below their respective ANZG (2018) default guideline values (DGVs) throughout 2025, with the exception of a single exceedance of the copper DGV at site DO2. However, limited legacy copper data for this site, apart from a single 2019 result that was below the DGV, prevents a robust historical comparison.

Chemical Monitoring – Intertidal sediments

Intertidal sediments sampling has been conducted at 12 sites. Site locations and the type of chemical analysis undertaken are presented in Figure 3 and Table 2.

Within the intertidal sediments, exceedances of the DGVs were observed for chromium at WB^R and NEC; Nickel at WB^R, KB^R and NEC; and Zinc at NNDBU. Nickel concentrations have been elevated at most sites throughout the life of the ChEMMS program, however, there has been a noticeable increase (at reference and impact sites) in nickel levels since 2014. The occurrence of elevated concentrations at

both reference and impact locations indicates that the observed pattern is unlikely to be associated with existing NWS operations. Based on the available data, the results do not indicate an operationally related trend and do not warrant additional investigation at this time.

Overall, chromium concentrations were consistent with historical trends and exceedance patterns, with the exception of intertidal site NEC, where chromium exceeded guideline values for the first time.

Site NNBDU within KGP recorded its third zinc exceedance since 2019; however, concentrations remained below the GV-High value and are therefore considered to be of low concern. TPH concentrations in 2025 were variable, ranging from 2 mg/kg (KB^R) to 269 mg/kg (CC^R). Concentrations of methyldiethanolamine (MDEA) during 2025 were below the limit of reporting (LoR) at all locations.

Chemical Monitoring – North East Creek Intertidal sediments

Six intertidal sediment samples have been collected from North East Creek. Figure 4 and Table 4 provides a summary of the location of each sediment sampling site and the type of chemical analysis undertaken in each sample.

The ChEMMS program was expanded in 2017 to investigate spatial trends in intertidal sediment contamination at North East Creek, which historically has shown elevated levels of mercury and TPH (i.e. above ANZG trigger levels) in samples. Sediment quality sampling has been conducted annually since 2017 to support ongoing contamination assessment and management requirements under the *Contaminated Sites Act 2003*, based on the current classification of the site.

As in previous sampling years, the concentrations of all metals in North East Creek were generally higher at NEC1 compared to other sites. In 2025 NEC1-B and NEC5-A were the only North East Creek sites that recorded exceedances of metals. The number and nature of DGV exceedances recorded in 2025 were consistent with those observed in 2024. In both years, exceedances were identified at two sites, comprising cadmium, recoverable mercury and zinc at one site (NEC1-B in 2025; NEC1-A in 2024) and recoverable mercury only at a second site (NEC5-A in 2025; NEC6-B in 2024). No GV-high exceedances were seen in any North East Creek samples. It is also worth noting that, although no exceedance was recorded at NEC6-A in 2025, the recoverable mercury concentration (0.15 mg/kg) was equal to the applicable DGV. Normalised TPH results in 2025 were generally comparable to 2024 and previous years with all sites being below the DGV (280 mg/kg).

Oyster Monitoring

Oysters from 17 sites have been collected for chemical analysis to test for potential bioaccumulation of contaminants. Site locations and the type of chemical analysis undertaken are presented in Figure 2, Figure 3 and Table 3.

Copper has exceeded the Food Standards Australia New Zealand (FSANZ) (2005) Generally Expected Level (GEL) 90th percentile during most years at all sites on the western side of the Burrup Peninsula, with copper exceeding the GEL at all impact sites and 2 reference sites (CH6^R and CH7^R) in 2025. Sites located away from the industrial areas (NB^R, WC^R, HC^R and CC^R) reported concentrations of copper below the GEL.

A single exceedance of the FSANZ guideline value for cadmium (2 mg/kg) was recorded in oyster tissue at site WC^R (2.5 mg/kg). This represents the first occasion on which cadmium concentrations at this site have exceeded the guideline value.

Similarly to 2024, the GEL for zinc (290 mg/kg) was exceeded at all impact sites in 2025, whilst all reference sites on the northern and eastern sides of the Burrup (NB^R, WC^R, HC^R, CC^R and CH7^R) apart from CH6^R reported concentrations below the GEL. In 2025, chromium, lead and nickel concentrations in oyster tissue were all below their FSANZ maximum level or GEL criteria, which follows historical trends which present low variability between sites and years. Variable trends currently seen are likely due to natural factors including sporadic environmental variation (as seen in the historic data).

Hydrocarbon concentrations (TPH C6-9, TPH C10-C14 and TPH C29-36 and PAHs) at all sites during the 2025 monitoring campaign were below their respective LoRs, which has been the typical trend for all years surveyed. However, TPH C15-28 has been detected at several sites.

Mud Whelk Monitoring

Mud Whelk from six sites have been collected for chemical analysis to test for potential bioaccumulation of contaminants. Site locations and the type of chemical analysis undertaken are presented in Figure 2, Figure 3 and Table 3.

In 2025, a single copper exceedance in mud whelks at site WB^R were recorded and are considered isolated, with no evidence of analytes of interest being present in the broader biota, as no other metals exceedances for mud whelks were found. Cadmium, lead, mercury and zinc concentrations in mud whelk tissue were below their respective FSANZ maximum level or GEL criteria. There are no FSANZ maximum levels or GELs for chromium and nickel. Chromium and nickel concentrations have both been increasing steadily since 2013/2014 across most sites, including impact and reference locations. In general, results from 2025 for both these metals recorded reduced levels from 2023 and were comparable with historical surveys and typically less than those seen from 2018 to 2020. Total and individual TRHs concentrations at all sites were below the LoRs, which is consistent with historical surveys.

Mangrove Monitoring

Mangrove habitat and health data was collected at seven sites (Table 5 to Table 11). At each mangrove monitoring site, the parameters outlined in Table 6 were recorded.

Mangrove health monitoring undertaken as part of the 2025 ChEMMS program indicates that mangrove communities across all monitored impact and reference sites remain in generally good condition, with no evidence of decline attributable to Woodside's operations.

Conventional, ground-truthed mangrove health assessments showed that canopy cover, species composition, phenology, insect damage, dust coverage and leaf condition were broadly consistent with recent monitoring years and within the range of natural variability.

Remotely Piloted Aircraft System (RPAS) surveys conducted in 2025 produced high-resolution multispectral imagery, enabling robust Normalised Difference Vegetation Index (NDVI) analysis across approximately 49 ha of mangrove habitat. Mean NDVI values recorded in 2025 were among the highest

observed since the commencement of the NDVI program and were well above site-specific Minimum Vegetation Index (MVI) and Management Level (ML) thresholds at all sites and survey areas.

The 2025 survey represents the tenth consecutive year of NDVI data collection, allowing comparison against a robust nine-year MVI baseline. The integration of long-term NDVI datasets with conventional mangrove health assessments provides a strong framework for detecting both acute and chronic changes in mangrove condition.

Overall, results from the 2025 monitoring program indicate that mangrove ecosystems within the ChEMMS monitoring program remain healthy.

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1. Introduction

1.1. Background

As part of long term monitoring of potential impacts on the surrounding environment from North West Shelf (NWS) onshore activities, and in support of a range of regulatory management requirements, Woodside Energy Ltd (Woodside) undertakes annual chemical and biological monitoring of the intertidal and subtidal environment in the vicinity of its port facilities in Mermaid Sound, Dampier (Figure 1). These facilities include hydrocarbon gas and liquids offloading jetties located adjacent to the KGP and the King Bay Supply Base (KBSB).

The Chemical and Ecological Monitoring of Mermaid Sound (ChEMMS) monitoring program was initiated by Woodside in June 1985. ChEMMS is a surveillance monitoring program that monitors the following parameters:

- Contaminant concentrations (e.g. metals, hydrocarbons) in samples of sediments, oysters and mud whelks on an annual basis,
- Mangrove health at selected sites on an annual basis, and
- The impact of turbidity from shipping on corals through five-yearly video-graphic surveys.

Monitoring for the ChEMMS program is undertaken at several locations including:

- Impact sites around the KBSB and KGP including North East Creek (NEC), No Name Bay (NNB), No Name Bay Drain (NNBD), No Name Bay Drain Upstream (NNBDU) and Slug Catcher Beach (SCB).
- Reference sites Conzinc Bay (CZ^R), Withnell Bay (WB^R), Watering Cove (WC^R), Cowrie Cove (CC^R), King Bay (KB^R), North Burrup (NB^R) and Hearson Cove (HC^R).

The purpose of the sites adjacent to the KBSB and KGP is to monitor for environmental changes that may be indicative of impacts arising from operation of these facilities.

The sites are intended to provide evidence of any regional change in monitored parameters close to the KBSB and KGP, and to document the effectiveness of field and laboratory quality assurance/quality control (QA/QC) procedures.

Historical Monitoring

Historical monitoring for the ChEMMS program has been undertaken since 1985, however data suitable for comparison to the 2025 monitoring program is only available from 1990 onwards.

2025 Monitoring Program

The monitoring survey was conducted between the 24th and 30th October 2025. During this time, the following sampling was undertaken:

- Subtidal sediment samples from sites KBSB, KGP, WDO, CZ^R and WB^R which were analysed for contaminants, including metals and hydrocarbons,
- Intertidal sediments within mangrove monitoring sites at NEC, NNBDU, SCB, CZ^R, WB^R, WC^R, CC^R, KB^R, NB^R and HC^R which were analysed for contaminants, including metals and hydrocarbons,
- Oyster samples from sites KBSB, KGP, CZ^R, NB^R, WC^R, HC^R and CC^R,

- Mud whelk samples within the mangrove sites at KBSB, KGP, WB, CZ^R, WC^R and CC^R
- Mangrove health parameters within mangrove habitat at NEC, NNB, CZ^R, WB^R, WC^R, KB^R and HC^R

Additional details of the sites, methods and analysis are discussed throughout this report.

1.2. Objectives

The objectives of the 2025 monitoring program were to:

- Support assessment of compliance with the Environmental Quality Criteria and Environmental Quality Standards established under the North West Shelf Extension Marine Environmental Quality Management Plan, to evaluate whether the Environmental Quality Objectives are being achieved;
- Identify changes in the monitored parameters over time, which may be indicative of acute environmental impacts,
- Identify any long-term trends in the monitored parameters that may be indicative of chronic environmental effects,
- Continue to investigate spatial trends in sediment contamination at North East Creek, which historically had shown levels of mercury and Total Petroleum Hydrocarbons (TPH) above ANZG trigger levels,
- Undertake a comparison of the 2025 NDVI data against the established 5-year Minimum Vegetation Index (MVI) for mangrove health, and
- Carry out an investigative pilot study on species specific mangrove health within impact and reference sites surrounding the Burrup Peninsula.



Figure 1: Project location map

2. Methods

2.1. Chemical Monitoring

Marine environmental quality sampling was undertaken during the 2025 survey at sites within Mermaid Sound and Nickol Bay. Chemical sampling included collection or attempted collection of subtidal sediment samples from 20 sites, intertidal sediment samples from 12 sites, 6 intertidal sediment samples from North East Creek, oysters from 17 sites, and mud whelks from 6 sites. All sites were located using the GPS points as described in Table 1, Table 2 and Table 3.

2.1.1. Subtidal Sediments

Sediments were collected using a Van Veen grab that retrieved a sample 10-15 cm in sediment depth of approximately 1kg of sediment. Undisturbed samples were deposited into a decontaminated sampling bowl for photography and processing. Each sample was photographed prior to mixing, and a visual description of the material made in accordance with AS1726 – Geotechnical site investigations. Recorded characteristics included; physical appearance, colour, odour, plasticity, sand grain size and presence of organic matter, marine organisms, shell and other relevant features. The sample was then homogenized and placed into sampling containers and chilled for laboratory analysis. The sampler wore nitrile gloves and used clean, sterile uncontaminated containers supplied by the laboratory in advance of the survey.

Subtidal sediments sampling site locations and the type of chemical analysis undertaken are presented in Figure 2, Figure 3 and Table 1.

The locations were:

- King Bay Supply Base,
- Karratha Gas Plant,
- Conzinc Bay,
- Wastewater Outfall, and
- Withnell Bay.

Replicate samples (multiple discrete samples from a single location) were collected at 10% of locations to test for inter-site homogeneity.

Table 1: Subtidal sediment locations and analytes

Site	Location	Latitude	Longitude	Moisture	Trace Metals (Cr, Cu, Ni, Zn, Pb, Cd)	PAH	TPH (low level), BTEXN, TRH	Sulphide	Trace Metals (Hg)	MDEA	TOC
CH1	KBSB	20° 37.613'	116° 44.671'	X	X	X	X				X
CH2	KBSB	20° 37.288'	116° 44.655'	X	X	X	X				X
CH2a	KBSB	20° 37.288'	116° 44.655'	X	X		X				X
CH3	KGP	20° 35.925'	116° 45.761'	X	X	X	X				X
CH4	KGP	20° 35.634'	116° 45.956'	X	X	X	X				X
CH5	KGP	20° 35.208'	116° 46.379'	X	X	X	X		X		X
CH6	CZ	20° 33.351'	116° 47.571'	X	X	X	X				X
CH7	CZ	20° 32.438'	116° 48.209'	X	X	X	X				X
SB1	KBSB	Pilot vessel landing		X	X	X					
SB1a	KBSB	Pilot vessel landing		X	X		X	X			X
SB2	KBSB	20° 37.555'	116° 44.938'	X	X	X					
SB3	KBSB	20° 37.612'	116° 44.953'	X	X	X					
SB4	KBSB	20° 37.748'	116° 44.788'	X	X	X					
SB5	KBSB	20° 37.779'	116° 44.662'	X	X	X					
SB12	KBSB	20° 37.476'	116° 44.904'	X	X	X					
DO1	WDO	20° 35.252'	116° 45.817'	X	X		X	X	X	X	X
DO2	WDO	20° 35.263'	116° 45.837'	X	X		X	X	X	X	X
DO3	WDO	20° 35.246'	116° 45.841'	X	X		X	X	X	X	X
DO4	WDO	20° 35.301'	116° 45.751'	X	X		X	X	X	X	X
DO4a	WDO	20° 35.301'	116° 45.751'	X	X		X	X	X	X	X
DO5	WDO	20° 35.286'	116° 45.782'	X	X		X	X	X	X	X
DO6	WDO	20° 35.230'	116° 45.745'	X	X		X	X	X	X	X
DO7	WDO	20° 35.250'	116° 45.775'	X	X		X	X	X	X	X
DO7a	WDO	20° 35.250'	116° 45.775'	X	X		X	X	X	X	X

PAH: Polycyclic Aromatic Hydrocarbons, TPH: Total Petroleum Hydrocarbons, BTEXN: Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene, TPH: Total Petroleum Hydrocarbons, TRH: Total Recoverable Hydrocarbons, MDEA: Methyl diethanolamine, TOC: Total Organic Carbon, Duplicate samples defined by "a"

2.1.2. Intertidal sediments

Sediment samples within the mangrove areas were collected using a plastic spoon for metals, and a metal spoon for hydrocarbon analysis. Surface material from the top 1-5 cm layer was sampled within an undisturbed 1 m x 1 m plot. All sediments were homogenised and placed into jars and bags and stored on ice for laboratory analysis. The sampler wore nitrile gloves, and used clean, sterile uncontaminated containers supplied by the laboratory. Intertidal sediment monitoring sites and type of chemical analysis undertaken are presented in Table 2 and Figure 3. The monitoring sites at North East Creek are discussed in the context of a separate investigation in Section 2.1.4.

Table 2: Intertidal sediment sampling locations and analytes

Site	Location	Latitude	Longitude	Moisture	Metals (Cr, Cu, Ni, Zn, Pb, Cd)	Mercury	TPH lower level, BTEXN & TRH	Sulphide	Total N & Total P	PFAS	TOC	MDEA
NEC	North East Creek	20° 35.502'	116° 46.980'	X	X	X	X	X		X	X	X
NNB	No Name Bay	20° 35.898'	116° 45.966'	X	X	X	X	X	X	X	X	X
NNBD	No Name Bay Drain	20° 35.910'	116° 45.972'	X	X	X	X	X	X	X	X	X
NNBDU	No Name Bay Drain Upstream	20° 35.884'	116° 46.120'	X	X	X	X	X	X		X	X
SCB	Slug Catcher Beach	20° 35.248'	116° 46.858'	X	X	X	X	X	X		X	X
WB^R	Withnell Bay	20° 34.284'	116° 48.042'	X	X	X	X	X			X	
CZ^R	Conzinc Bay	20° 32.604'	116° 48.954'	X	X	X	X	X			X	
HC^R	Hearson Cove	20° 37.656'	116° 45.934'	X	X	X	X	X			X	
CC^R	Cowrie Cove	20° 36.228'	116° 48.444'	X	X	X	X	X			X	
WC^R	Watering Cove	20° 35.310'	116° 48.864'	X	X	X	X	X		X	X	
KB^R	King Bay	20° 37.903'	116° 45.963'	X	X	X	X	X			X	
NB^R	North Burrup	20° 31.565'	116° 49.525'	X	X	X	X	X			X	

PAH: Polycyclic Aromatic Hydrocarbons, BTEXN: Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene, MDEA: Methyl diethanolamine, N: Nitrogen, P: Phosphorus, PFAS: Per- and Polyfluoroalkyl Substances, TPH: Total Petroleum Hydrocarbons TRH: Total Recoverable Hydrocarbons, TOC: Total Organic Carbon, Reference sites defined by ^R

2.1.3. Biological Samples

Two forms of biological tissue were collected for chemical analysis to test for potential bioaccumulation of contaminants:

- Oyster tissue from marine intertidal areas, and
- Mud whelk tissue from mangrove areas.

During both forms of sampling, forceps and nitrile gloves were replaced or cleaned for each site, and any tissue sample with shell fragments were not collected for analysis to avoid sample contamination. All sampling was undertaken with laboratory prescribed methods.

Oyster Harvesting

Approximately 15-20 oysters of either *Saccostrea cucullata* and/or *Saccostrea echinata* from each site were collected by prying off from the substrate using a stainless-steel knife with the sampler wearing fabric gloves with nitrile palms. Oysters were then shucked with a stainless-steel knife and tissue removed to allow collection of a minimum mass of ~50g of tissue from each sample site. A variety of shell lengths were sampled to give a representative snapshot of the population, however, generally larger individuals were selected to reduce the total amount required to be harvested. Upon collection, the oyster tissue samples from each site were placed in zip-lock bags, then stored frozen during transport to a National Association of Testing Authorities (NATA)-accredited laboratory.

Mud Whelk Harvesting

Mud whelks were individually harvested from bare substrate adjacent to the mangrove pneumatophores. During collection, the sampler wore fabric gloves with nitrile palms. At each sample site, approximately 12 mud whelks, either *Telescopium telescopium* and/or *Terebralia palustris*, were collected to account for ~50 grams for testing. A variety of shell lengths were collected to ensure sufficient sample was available for testing. Tissue sample was obtained from each whelk using a stainless-steel hook. Upon collection, the mud whelk tissue samples from each site were placed in zip-lock bags, then stored frozen during transport to a NATA-accredited laboratory.

Sampling of oysters and mud whelks was undertaken at the sites shown in Figure 2 and Figure 3. The location of each site and type of chemical analysis undertaken are summarised in Figure 3. A total of 17 oyster sites and 6 mud whelk sites were sampled.

Table 3: Biota sampling locations and analytes

Site	Location	Longitude	Latitude	Trace Metals (Cr, Cu, Ni, Zn, Pb, Cd)	Trace Metals (Hg)	Moisture Content	TRH	PAH	Lipid Content
Oysters									
CH1	KBSB	20° 37.433'	116° 44.700'	X		X	X	X	X
CH2	KBSB	20° 37.383'	116° 44.700'	X		X	X	X	X
CH3	KGP	20° 35.933'	116° 45.799'	X		X	X	X	X
CH4	KGP	20° 35.650'	116° 46.066'	X		X	X	X	X
CH4a	KGP	20° 35.650'	116° 46.066'	X		X	X	X	X
CH5	KGP	20° 35.266'	116° 46.383'	X		X	X	X	X
CH6 ^R	Conzinc Bay	20° 33.499'	116° 47.500'	X		X	X	X	X
CH7 ^R	Conzinc Bay	20° 32.466'	116° 46.233'	X		X	X	X	X
CH7a ^R	Conzinc Bay	20° 32.466'	116° 46.233'	X		X	X	X	X
DO1	WDO	20° 35.488'	116° 46.112'		X	X			
DO2	WDO	20° 35.455'	116° 46.092'		X	X			
S1	KBSB	20° 37.416'	116° 44.700'	X		X	X	X	X
S5	KBSB	20° 37.349'	116° 44.733'	X		X	X	X	X
S7	KBSB	20° 37.316'	116° 44.749'	X		X	X	X	X
S8	KBSB	20° 37.216'	116° 44.899'	X		X	X	X	X
WC ^R	Watering Cove	20° 35.315'	116° 48.867'	X		X	X	X	X
CC ^R	Cowrie Cove	20° 36.364'	116° 48.648'	X		X	X	X	X
HC ^R	Hearson Cove	20° 37.631'	116° 47.964'	X		X	X	X	X
NB ^R	North Burrup	20° 31.565'	116° 49.525'	X		X	X	X	X
Mud Whelks									
WB ^R	Withnell Bay	20° 34.284'	116° 48.042'	X	X	X	X	X	
CZ ^R	Conzinc Bay	20° 32.604'	116° 48.954'	X	X	X	X	X	
NNB	No Name Bay	20° 35.898'	116° 45.966'	X	X	X	X	X	
CC ^R	Cowrie Cove	20° 36.228'	116° 48.444'	X	X	X	X	X	
WC ^R	Watering Cove	20° 35.310'	116° 48.864'	X	X	X	X	X	
NEC	North East Creek	20° 35.502'	116° 46.980'	X	X	X	X	X	

PAH: Polycyclic Aromatic Hydrocarbons, TRH: Total Recoverable Hydrocarbons, Reference sites defined by "^R", Duplicate sites defined by "a"

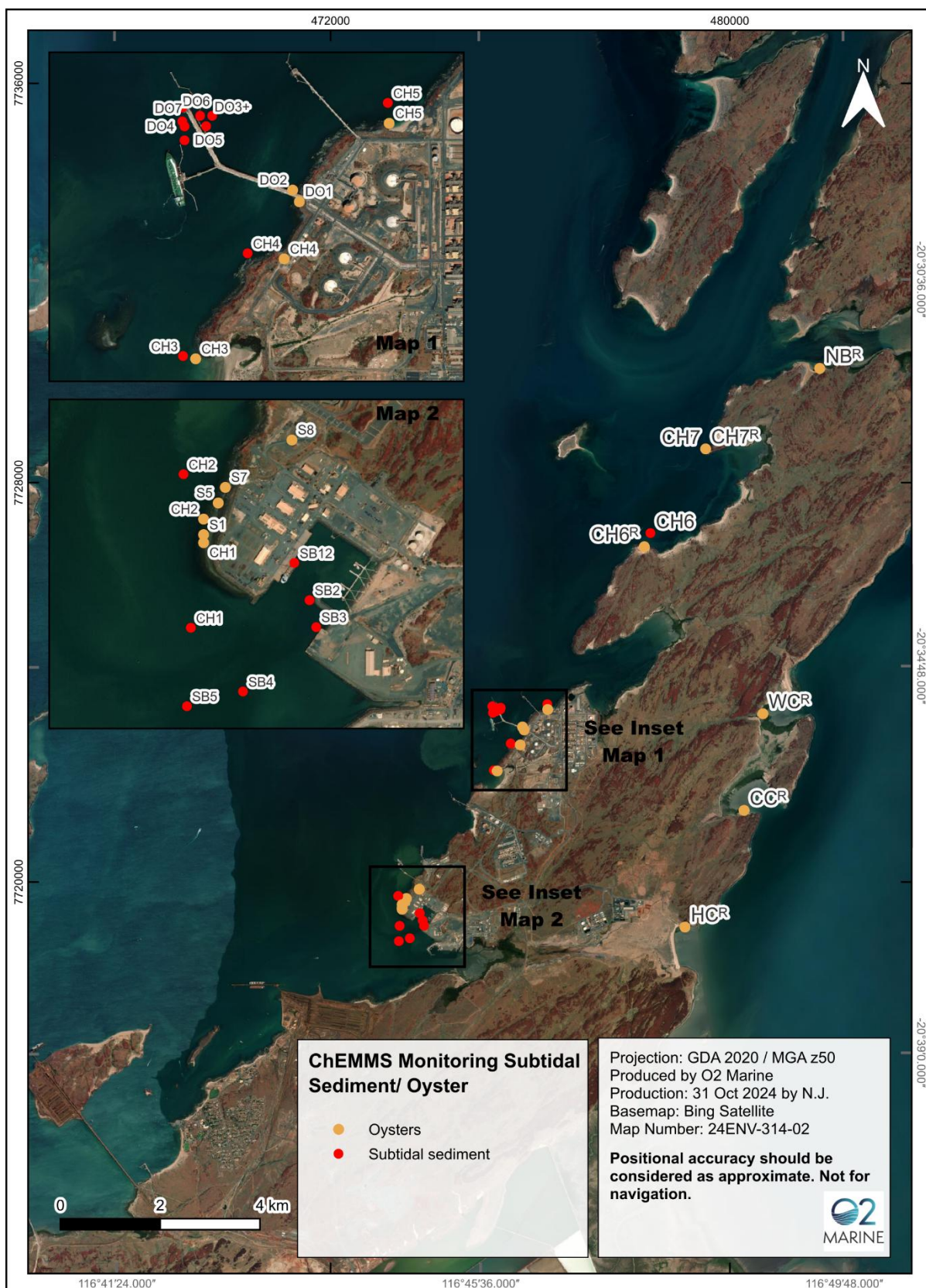


Figure 2: Oyster and subtidal sediment sampling locations

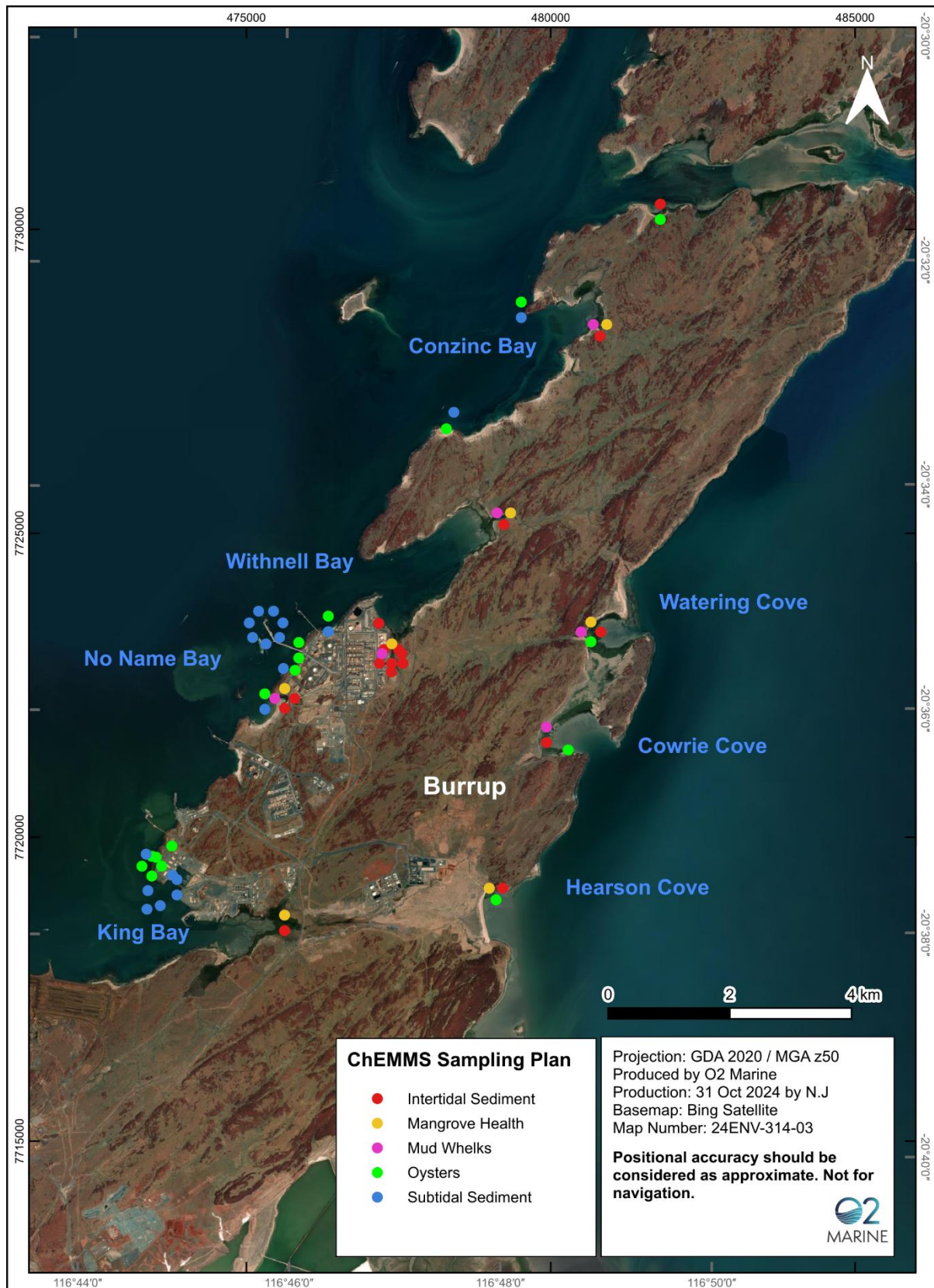


Figure 3: ChEMMS sampling map

2.1.4. North East Creek Investigation

The ChEMMS program was expanded in 2017 to investigate spatial trends in intertidal sediment contamination at North East Creek, which historically has shown elevated levels of mercury and TPH (i.e. above ANZG trigger levels) in samples. Sediment quality sampling has been conducted continuously since 2017 to support ongoing contamination assessment and management requirements under the *Contaminated Sites Act 2003*, based on the site's current classification status.

The annual North East Creek sampling program has provided ongoing monitoring of sediment quality to assess the status and spatial distribution of elevated contaminant concentrations within North East Creek. Monitoring results are used to evaluate temporal trends in contamination and to assess the effectiveness of remediation activities and active site management measures being implemented across the site. Investigations into potential contaminant transport pathways, including the movement of hydrocarbon-impacted sediments from North East Creek into Withnell Bay, have also been undertaken where relevant (O2 Marine, 2021).

Table 4 provides a summary of the location of each sediment sampling site and the type of chemical analysis undertaken in each sample. At each sampling site, sediment was collected from two sites (A and B) corresponding to each creek bank, west (A sites) and east (B sites), with an indicative GPS middle point position given (Table 4). Sediment samples were collected as per the methods described in Section 2.1.2.

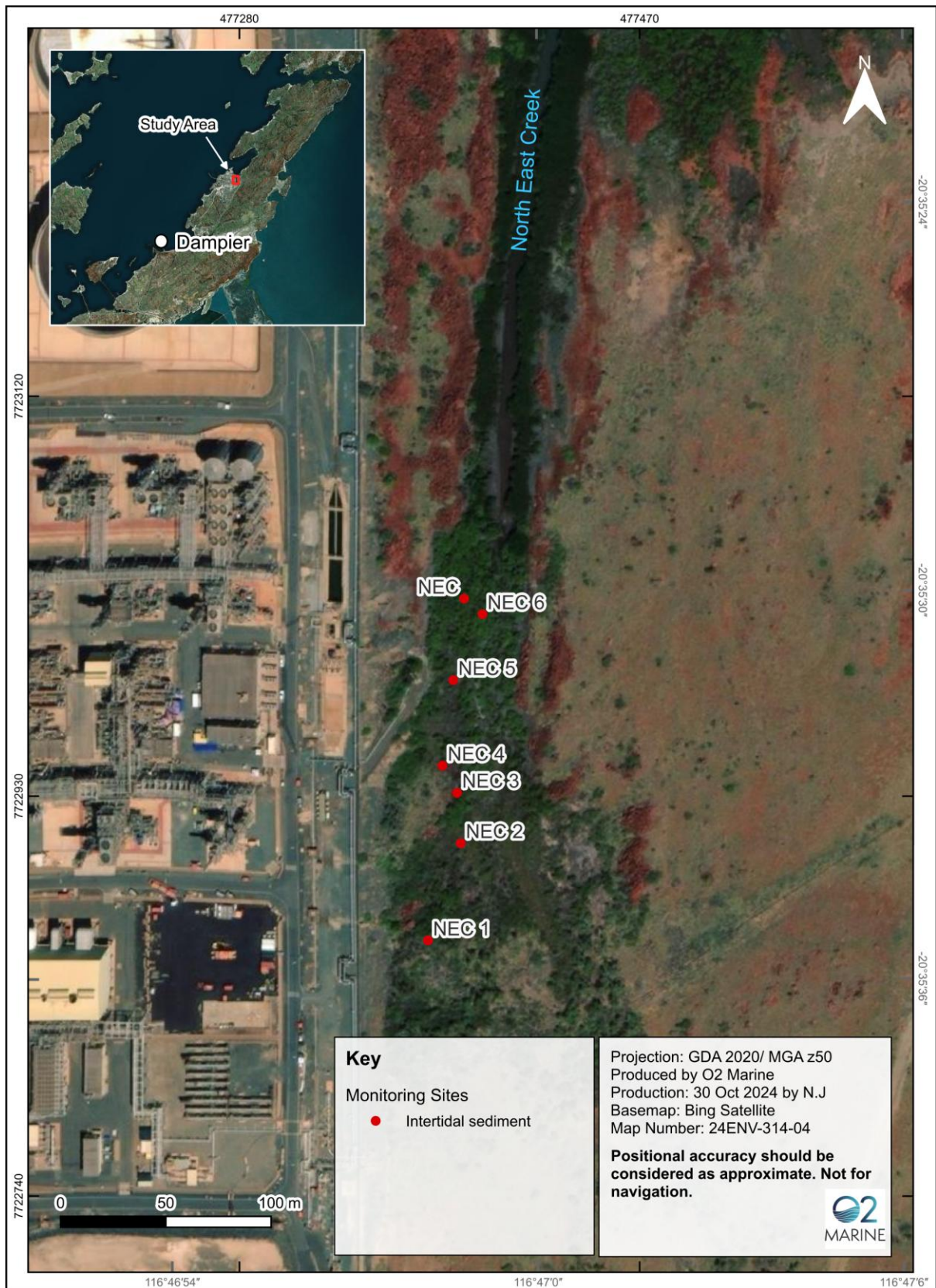


Figure 4: North East Creek intertidal sediment sampling locations

Table 4: North East Creek intertidal sediment sampling locations and analytes

Site	Location	Latitude	Longitude	Metals (Cd, Cr, Cu, Hg, Ni, Pb, Zn)	0.1M Extractable Mercury (FIMS)	Methyl Mercury	TPH / TRH	TOC	BTEXN	PFAS
NEC 1	North East Creek	20° 35.590'	116° 46.970'	X	X	X	X	X	X	X
NEC 2	North East Creek	20° 35.565'	116° 46.979'	X	X	X	X	X	X	X
NEC 3	North East Creek	20° 35.552'	116° 46.978'	X	X	X	X	X	X	X
NEC 4	North East Creek	20° 35.545'	116° 46.974'	X	X	X	X	X	X	X
NEC5	North East Creek	20° 35.523'	116° 46.977'	X	X	X	X	X	X	X
NEC6	North East Creek	20° 35.506'	116° 46.985'	X	X	X	X	X	X	X

BTEXN: Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene, **TPH:** Total Petroleum Hydrocarbons **TRH:** Total Recoverable Hydrocarbons, **TOC:** Total Organic Carbon, **PFAS:** Per- and Polyfluoroalkyl Substances

2.1.5. Field Quality Assurance and Quality Control

Field duplicates were taken at four, or 10%, of the sediment sampling sites. Duplicates for biota tissue were taken at two sites, or 10%, of sites.

For all samples sent to the laboratory, a Chain of Custody (CoC) form was filled out by the field staff and accompanied the samples, to be signed when received by the laboratory. All samples were pre-frozen and transported with ice bricks.

2.1.6. Data Analysis

Chemical analysis was undertaken by NATA-accredited laboratory, Australian Laboratory Service (ALS). The analysis methods and Limits of Reporting (LoR) are presented in Table 5. Laboratory QA/QC processes are described in Appendix G

Sediment results were compared with DGVs and GV-High in accordance with ANZG (2018). Oyster and mud whelk data were compared to the FSANZ Food Standards Code (2015), defined for the protection of human health. The FSANZ maximum level was based on the maximum level of a specified contaminant or natural toxicant permitted to be present in food. The GEL 90th percentile was used where an FSANZ maximum level was not available.

Total organic carbon (TOC) was normalised for all sediment results. The normalisation of TOC is now considered best practice when analysing hydrocarbons in sediments and is undertaken to ensure TPH values are not overrepresented due to a high organic content. The process of normalisation is undertaken simply by dividing the raw TPH results by the percentage of TOC in the sample.

Table 5: Laboratory methods and limits of reporting

Analysis	Method	LoR
Marine Sediment		
Trace metals (Cd, Cr, Cu, Pb, Ni, Zn)	USEPA 6020	0.1-1 mg/kg
Trace mercury	APHA 3112 Hg – B	0.01 mg/kg
Hydrocarbons	TRH (V)/BTWEN - USEPA SW 846 - 8260 TPH - USEPA SW 846 - 8270	0.2 - 3 mg/kg 3 mg/kg
PAHs and Phenols	USEPA SW 846 - 8270	4 - 5 µg/kg
PFAS	USEPA method 1633	0.0002 mg/kg
Moisture Content	In house	0.1 %
Sulphide as S	In house	0.01 % w/w
Sulfate	In house (ICPAES)	100 mg/kg
Sulfur	In house (LECO)	0.01 % w/w
Particle Size Distribution	Sedigraph	1 mg/L
MDEA	LC/MS/MS	10 mg/kg
TOC	In house (C-IR17)	0.02 %
Methyl Mercury	In house (IC/ ICPMS)	0.1 mg/kg
0.1M EDTA Extractable Mercury in Sediments by FIMS	APHA 3112 Hg - B	0.01 mg/kg
1M HCl Extractable Mercury in Sediments by FIMS (Intertidal sediment; NEC site only)	APHA 3112 Hg - B	0.01 mg/kg
BTEXN	USEPA SW 846 - 8260	0.2 mg/kg
Biota		
Metals in Biota by ICP-MS: Cd, Cr, Cu, Ni, Pb, Zn	APHA 3125B ORC/ICP/MC Otopole Reaction Cell	0.02 – 0.4 mg/kg
Mercury by FIMS	VC/FIMS	0.002 mg/kg
Moisture Content	In house	0.1%
TRH	In house	50 mg/kg
PAH	In house	2 µg/kg
Lipid Content	In house	0.005 %ar

2.2. Mangrove Monitoring

2.2.1. Mangrove Health (Conventional Method)

Mangrove habitat and health data was collected at seven sites (Figure 5 to Figure 11). The methods were adopted from the monitoring program undertaken by URS (2015). At each mangrove monitoring site, the parameters outlined in Table 6 were recorded.

Table 6: Mangrove health parameters

Mangrove Parameter	Method Description
Mangrove species	Species presence were recorded.
Canopy cover	Canopy density was determined by a spherical forestry densiometer, an engraved concave mirror with 24 squares of 6.5 mm used by the field team to view a consistent degree of arc overhead. An estimation of the foliage cover, including leaf and branch cover, was undertaken using the densiometer within four subplots formed by the four plot corners. Within each subplot four readings were taken, one reading for each direction north, south, east and west. Therefore, a total of 16 readings were taken at each plot. The overall canopy density was calculated as the mean of all 16 readings within the plot.
Insect damage	Insect damage was assessed using a percentage scale of the amount of leaves eaten or damaged.
Tree health (yellow leaves %)	Tree health was assessed using a percentage scale of the percentage of yellow leaves (Healthy: <10%; Sick: 10-50%; Critical: 50-75%; Dead: 100%)
Dust coverage	Dust coverage was also assessed using a percentage scale estimation of dust on leaves.
Phenology (flowering/fruiting)	Phenology was noted where there was flowering or budding present. If not, then notes were not taken.

Mangrove monitoring was undertaken using the same approach as previous years at sites that may potentially be impacted as a consequence of Woodside KGP operations. Two impact sites and five reference sites were monitored. These sites were:

- North East Creek (impact),
- No Name Bay (impact),
- Conzinc Bay (reference),
- Withnell Bay (reference),
- Hearson Cove (reference),
- Watering Cove (reference), and
- King Bay (reference)

The replicate monitoring plots within these impact and reference sites above are presented in Figure 5 to Figure 11. In the original monitoring program, Cowrie Cove (CC^R) was also monitored as a reference site instead of Watering Cove. However, due to ongoing shoreline erosion, CC^R was no longer considered an appropriate reference site and Watering Cove (WC^R) was established to replace it.

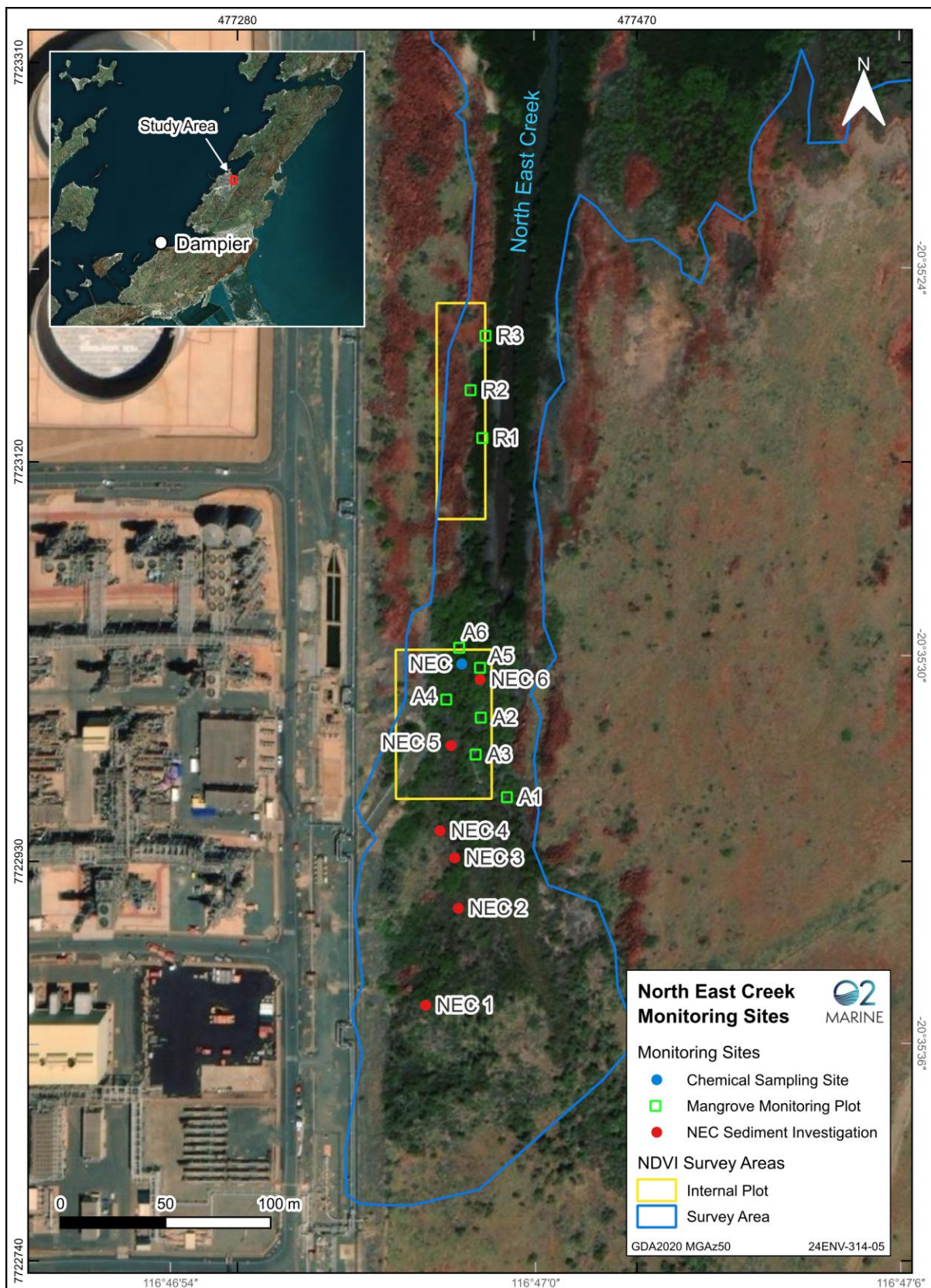


Figure 5: North East Creek intertidal sediment sampling and mangrove monitoring locations



Figure 6: No Name Bay mangrove monitoring locations

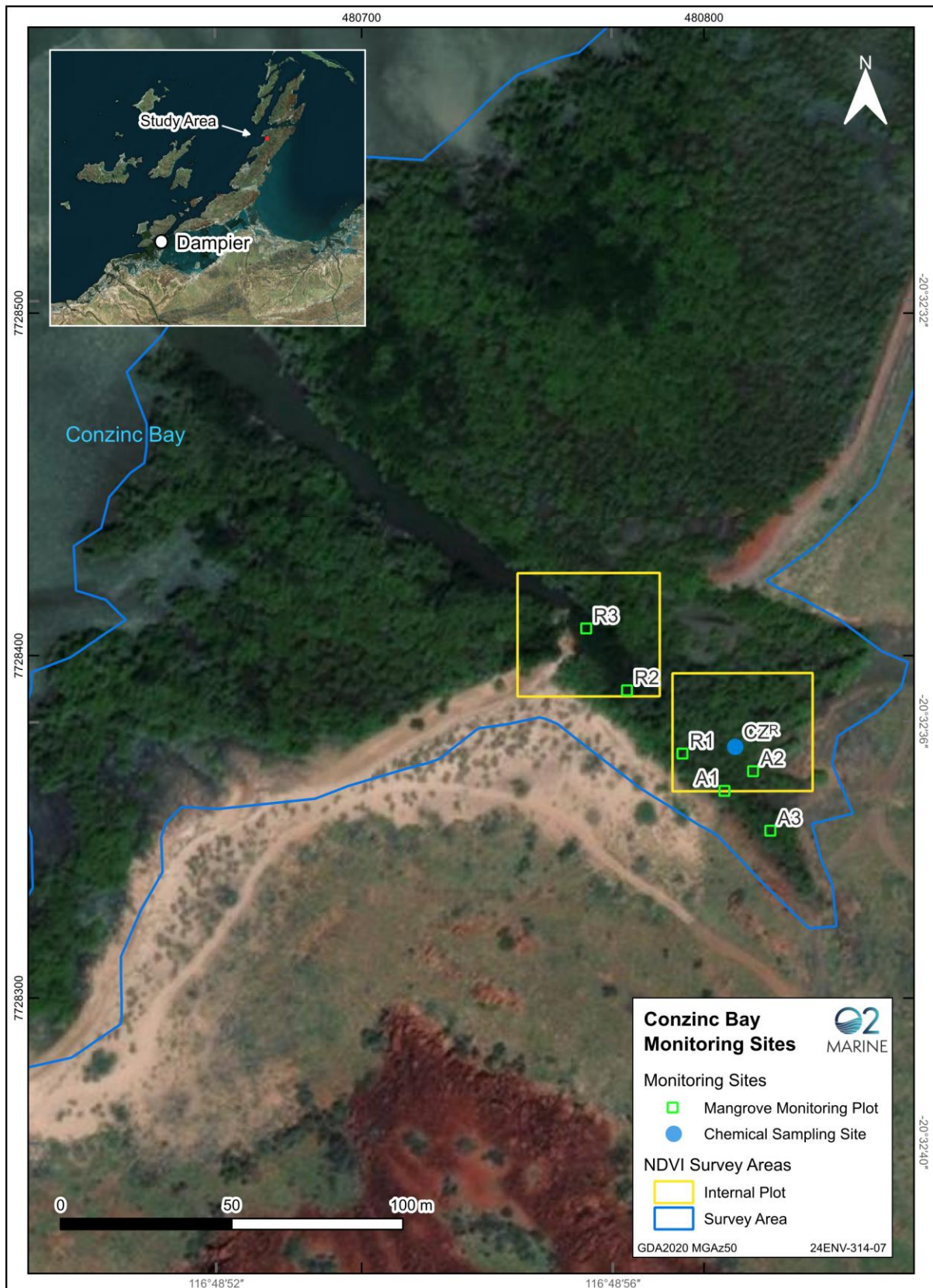


Figure 7: Conzinc Bay mangrove monitoring locations

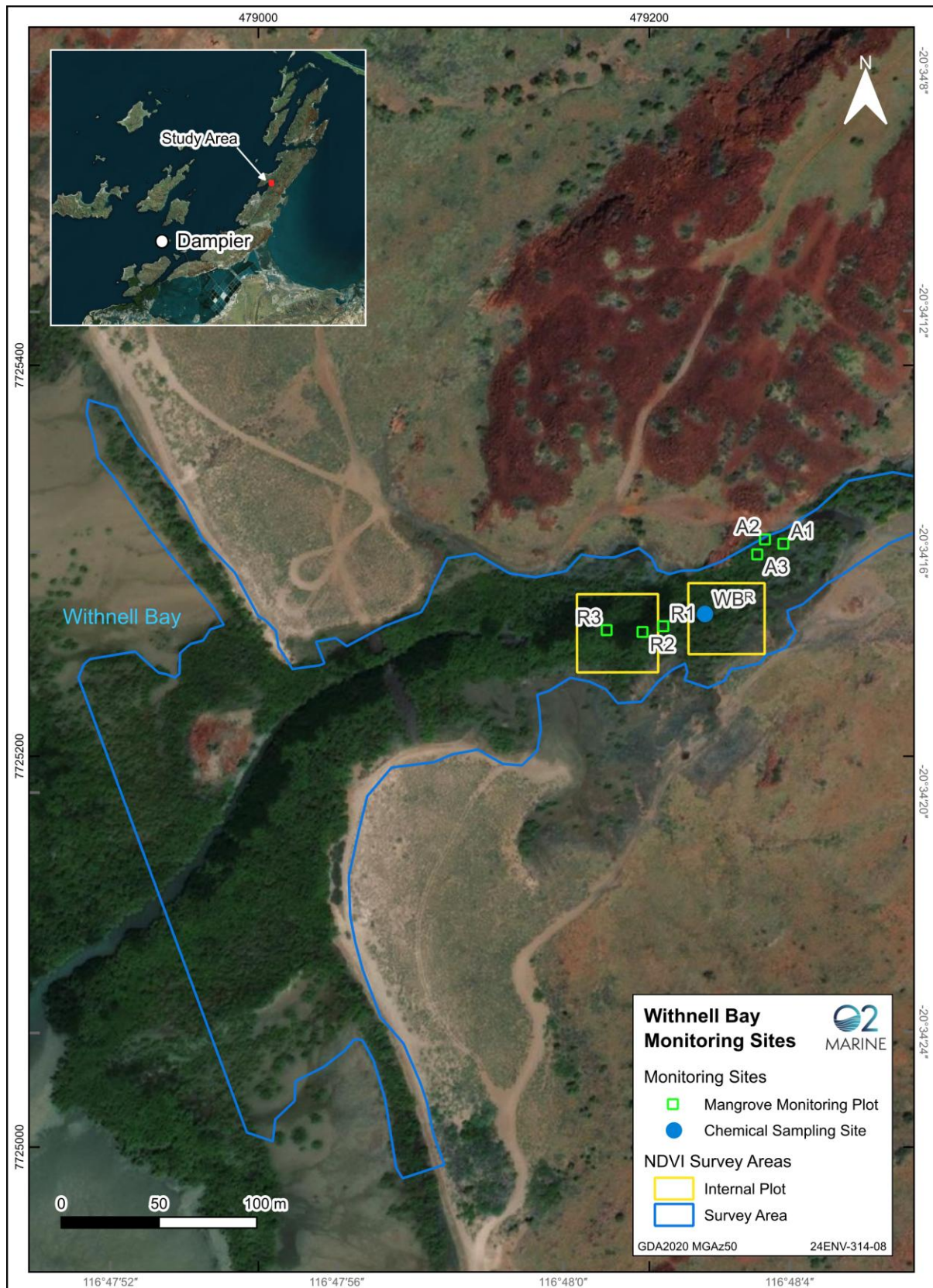


Figure 8: Withnell Bay mangrove monitoring locations

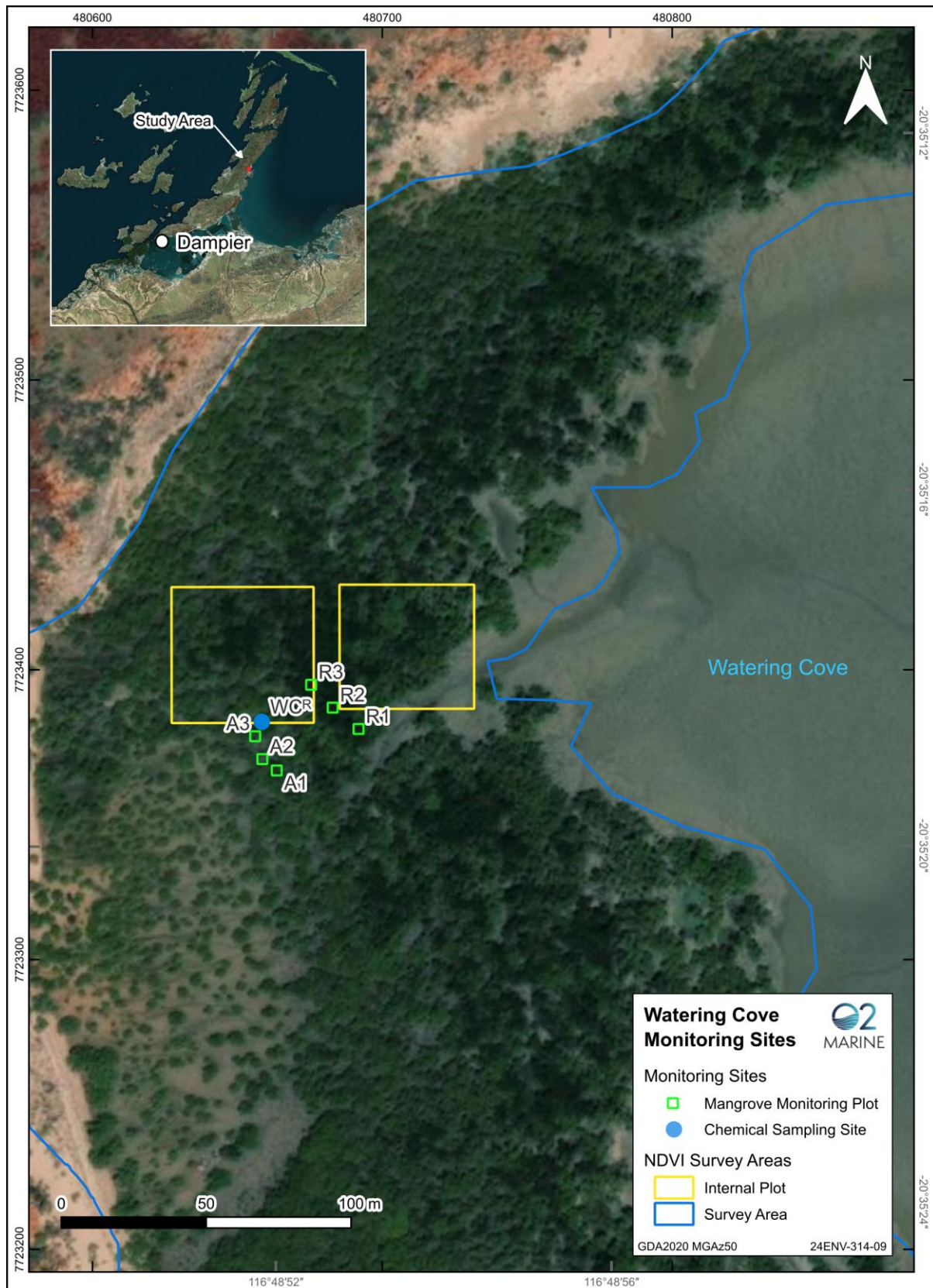


Figure 9: Watering Cove mangrove monitoring locations

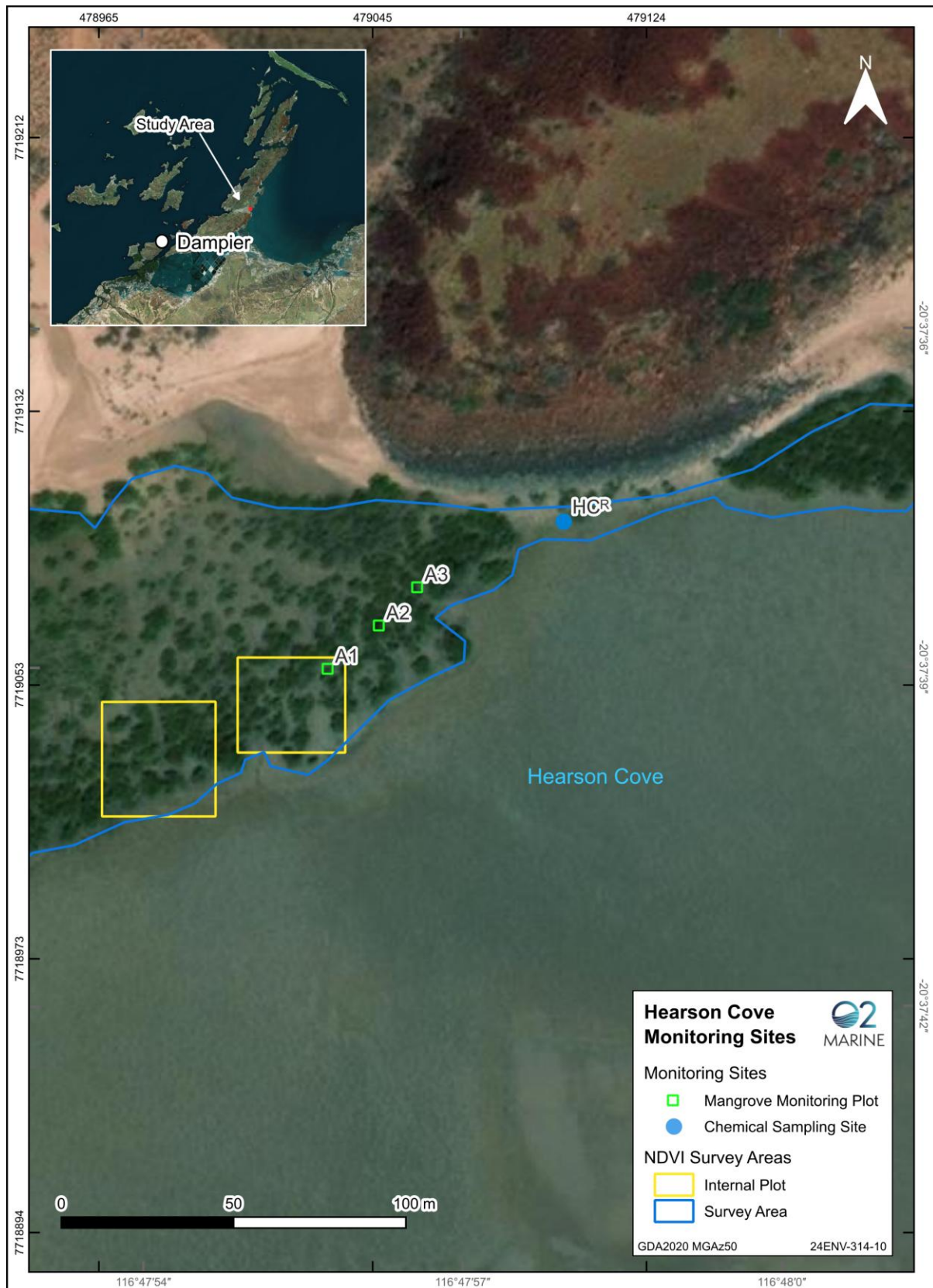


Figure 10: Hearson Cove mangrove monitoring locations

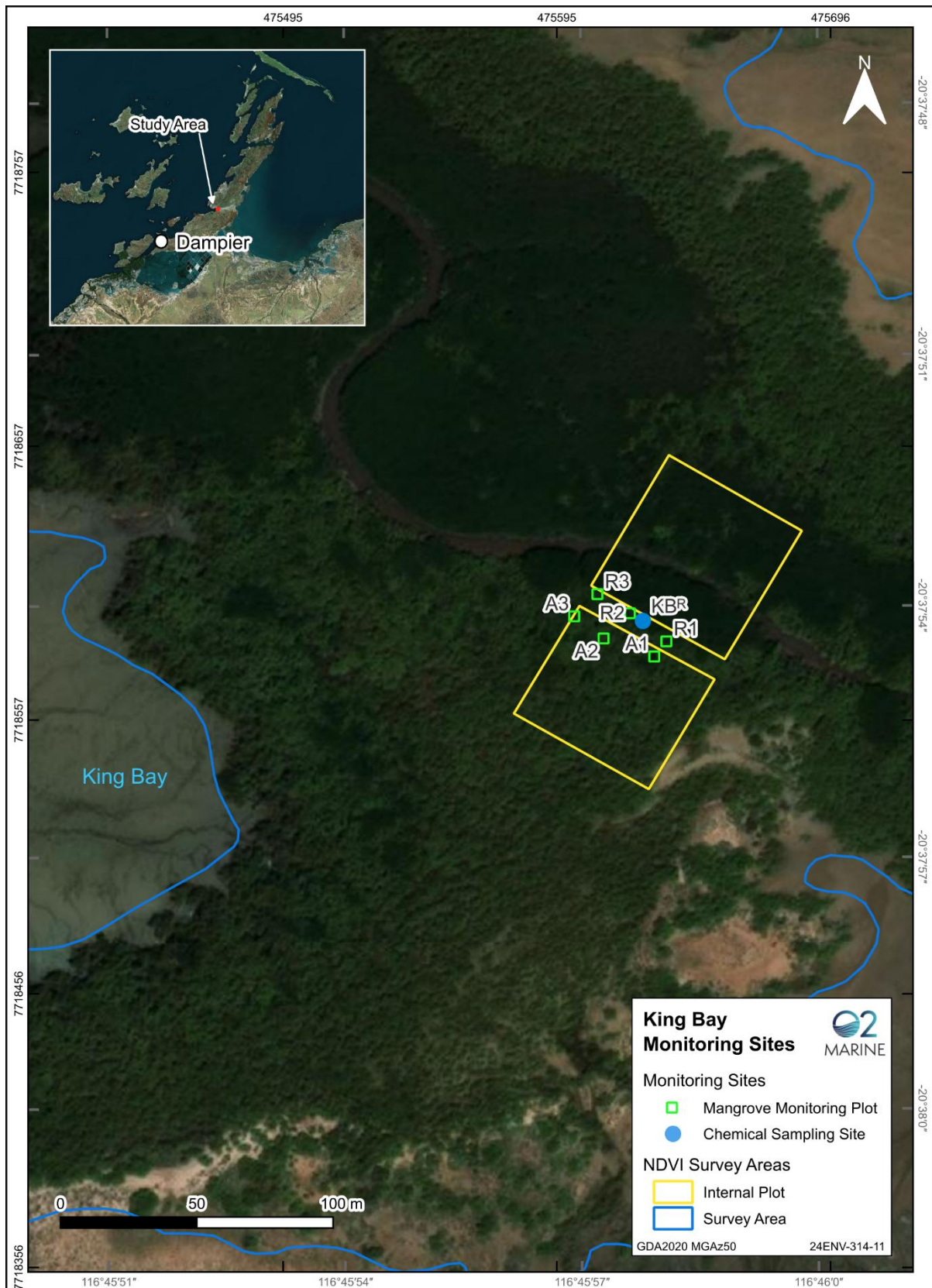


Figure 11: King Bay mangrove monitoring locations

2.2.2. NDVI Methodology

The Remotely Piloted Aircraft System (RPAS) system used to acquire NDVI data in 2025 was the DJI Mavic 3 Enterprise Multispectral (M3EM) RPAS. The M3EM functions as both a multispectral camera which contains five individual sensors: an RGB sensor and four other sensors to capture the following bands: Green (560 nm), Red (650 nm), Red Edge (730 nm) and Near Infrared (840 nm). Normalised Difference Vegetation Index (NDVI) is created by combining measured intensities in Red (630 to 690 nm) and Infrared (760 to 900 nm) bands. The M3EM RPAS is one of the premier industrial grade surveying RPAS available and is equipped with a spectral sunlight sensor on top of the aircraft to calculate solar irradiance in real-time for image compensation, maximizing the accuracy of collected multispectral data. The M3EM has improved battery life and greater orthophoto efficiency allowing greater versatility in the field. The M3EM RPAS allowed O2 Marine to attain higher resolution imagery (both RGB and multispectral) resulting in a more robust statistical analysis of mangrove health and extent.

NDVI can be used to assess a number of biological markers including; chlorophyll content, leafy green biomass, and leaf area. NDVI data can also be used to monitor seasonal and annual changes in vegetation growth (canopy cover), which can be used to infer vegetation health. Furthermore, the greenness of the canopy cover and the subsequent NDVI value attributed is used to infer mangrove health.

For each pixel within an image the NDVI is calculated using the following formula:

$$NDVI = \frac{I_{NIR} - I_R}{I_{NIR} + I_R}$$

Values; I_{NIR} and I_R , represent varying intensities of Near-Infrared (Band 4) and Red (Band 3) spectral ranges. The NDVI values range from -1 to 1 if the individual band intensities record values greater than zero (I_{NIR} and $I_R > 0$). Mangroves have been well documented to have a vegetation reflectivity of approximately 30% or greater (for denser healthy vegetation), which equates to NDVI values of 0.3 or more. It is therefore fair to infer that habitats exhibiting values lower than this are likely to be in poorer health, or have sparse mangrove cover (Cardno, 2013).

There has been some work (Cardno, 2013, INPEX, 2012, O2 Marine, 2024a)) that aims to provide a trigger level for the assessment of mangrove health from NDVI data. The trigger threshold is usually described as the minimum vegetation index (MVI). If NDVI data falls below the MVI value it is inferred that there may be an environmental impact to the mangroves.

A MVI can only be established once a representative dataset has been compiled to ensure that natural variability and seasonal influences are adequately accounted for; typically, a minimum of five years of data is required to define an MVI. For each monitoring site, the MVI is calculated as a multi-year mean of NDVI, derived from the annual mean NDVI values across the selected baseline period. For the current assessment, the MVI represents the mean of the annual mean NDVI values from 2016 to 2024, providing a 9-year baseline against which ongoing monitoring results can be assessed.

As additional valid baseline data become available, the MVI can be refined over time using a rolling baseline approach. Once the baseline period has been established (i.e. 10 years), each subsequent year of valid baseline data should be appended to the dataset while the oldest year is removed. This approach ensures that the baseline MVI evolves gradually in response to long-term changes in mangrove stands, such as growth or natural decline, while maintaining sensitivity to sudden or acute changes in vegetation health. Failure to allow the baseline to evolve in this manner may obscure meaningful deviations from the MVI where incremental chronic changes are not incorporated into an evolving baseline.

Management Level (ML) values are generally set at a specific percentage below the mean NDVI value across the baseline period (the MVI) at each specific site. The ML value for ChEMMS has been set at -20% of the MVI. It should be noted that the ChEMMS mangrove monitoring does not require a 'Trigger Level' for compliance purposes, rather the ML value should be used to reference if there is measurable decline in the health of the mangrove ecosystems and possibly implement further investigative studies should there be cause for concern.

Different seasons, even in evergreen species such as mangroves, have shown to substantially influence NDVI values. Previous studies (Cardno, 2013) have constantly shown that NDVI values are generally lowest during the dry season and highest during the wet season. Ideally for sub-tropical climates such as Karratha, 4 discrete seasons should be assessed; Early Wet (Nov-Jan), Wet (Feb-April), Early Dry (May-Jul) and Dry (Aug-Oct). However, if only one season is assessed, as long as the assessment timing remains constant an accurate comparison is possible.

The physical size of mangrove sites used for NDVI assessment varies depending on the scale of the habitat being assessed and the nature of the predicted impact (i.e. point-source versus diffuse sources). For Woodside's Karratha site, small NDVI plots within the overall area were created in areas that were representative of previously ground-truthed habitat (with the exception of Cowrie Cove in 2016). This approach enables a comparison between traditional mangrove health survey methods and aerial imagery analysis. It should be noted that some ground-truthed locations fall wholly or partially outside the defined small NDVI plots. This is due to the aforementioned areas being representative, rather than a direct comparison, as well as positional inaccuracy in the GPS coordinates recorded for specific mangrove monitoring sites within these plotted areas. The inaccuracy is due to dense vegetative canopy interfering with GPS signal acquisition at the time of coordinate logging, which can result in an approximate coordinate rather than an accurate one. To address both these limitations, the larger, overarching site areas were also assessed to provide a more holistic evaluation of mangrove health at each location. The sites used for NDVI analysis presented in Figure 5 to Figure 11.

Varying sizes of site areas is predominantly due to the shape of mangrove habitat around the shoreline and the site and shape of existing mangrove health sites. Variability in site size across different sites does not affect the ability to compare data as each site, as changes from the MVI are site specific.

2.2.3. Imagery Analysis

NDVI data from selected polygons (plots and sites) was analysed using Q-GIS software. This software will be utilized to extract NDVI values for all pixels and their coordinates within the area of interest.

Any negative NDVI values (non-vegetated area) were masked using various ArcGIS auto processing tools. The “no vegetation” mask (NDVI <0) created through this automated process produced highly satisfactory data with very limited errors from turbid water or over water areas with sunlight reflection. The “no vegetation” mask is less time consuming than creating separate raster layers and has shown to produce results to the same degree of accuracy. This approach directly targets vegetated areas resulting in a MVI based solely on mangrove cover, rather than the use of multi substrate MVI calculated from all pixels within an image. This approach helps detect smaller changes in habitat, not just larger changes resulting in bare sediment increases (i.e. complete vegetation loss).

2.2.3.1. Refinement of NDVI Interpretation Through Mangrove Species Classification

Although deriving a mean NDVI value at a site level assist to differentiate vegetation from other types of land cover (artificial/ bare mud, water, shadow, samphires and cyanobacterial mats) and provide an indicator for plant health, the overall NDVI mean at a site level may be skewed by the presence and composition of different mangroves species (Yin et al., 2024). *Avicennia Marina* and *Rhizophora Stylosa* are the two dominant species that are assessed with the ChEMMS program, not only for NDVI analysis, but for the in situ mangrove health assessment. The canopy of *R. stylosa* is a much darker green compared to the more abundant *A. marina* and as greener canopies will return higher NDVI values compared to light green/yellow/brown canopies, *R. stylosa* has the potential to return higher NDVI values when compared to *A. marina* (Cardno, 2013). O2 Marine now have the capability to utilise GIS applications to differentiate species from the RPAS derived imagery and generate species specific NDVI values for further analyses.

For this analysis, we implemented a Random Forest machine learning classification on the high-resolution drone orthomosaic in an area covering the seven mangrove study areas. The input data comprised four calibrated reflectance spectral bands—green (560 nm), red (650 nm), red-edge (730 nm), and near-infrared/NIR (840 nm) which were split into separate raster layers from the original orthomosaic, each at a cell size of 3 cm. Training polygons based on recognised categorical field habitat types were created, including known *A. marina* and *R. stylosa* mangrove forest types, as well as numerous non-mangrove features such as bare mud, water, shadow, samphires and cyanobacterial mats. In total, the training polygons encompassed 20-30 thousand raster cells for each area, approximately evenly split across categorical classes.

The classification was executed using a Python-based script implemented in QGIS. For each area, a Random Forest model was trained with 200 decision trees, a minimum sample leaf size of 1, and a minimum sample split size of 2 using the Gini index as the split criterion, with 20% of the data allocated for testing in each model run. Training accuracy was consistently high, which raised the possibility of overfitting; however, high test accuracies (around 95-98%) and Kappa values exceeding 0.95 indicated a robust model structure with a strong generalisation capability across distinct mangrove and non-mangrove classes. Variable permutation importance analysis revealed that the NIR and red bands were the most influential predictors across all sites. Model outputs were refined using a raster generalisation procedure to remove ‘speckle’ noise and unify small patches.

The raster classification results were then clipped to polygon envelopes of each study area, as well as two smaller monitoring quadrats for each area, and the area in Ha of each mangrove forest type was

calculated. Raster NDVI values were also similarly clipped, and NDVI statistics were calculated as follows:

- Mean and standard deviation NDVI for values >0.3 (mostly mangrove), clipped to the overall study envelope.
- Mean and standard deviation NDVI for values >0.3 (mostly mangrove), clipped to the two monitoring quadrats for each area.
- Mean and standard deviation NDVI clipped to the mapped area of *A. marina* forest.
- Mean and standard deviation NDVI clipped to the mapped area of *R. stylosa* forest.

O2 Marine recognises that this additional study does not contribute to the suite of NDVI data and the MVI/Analysis that has been captured over the past ten years however, this additional analysis may provide an insight to site specific mangrove composition, and mangrove species health at a site level at all analysed sites surrounding the Burrup peninsula in future ChEMMS monitoring programs.

2.2.3.2. Data Output

For each site surveyed the following imagery was generated;

- Aerial image at ~60 m above sea-level, and
- NDVI output image

Only low resolution NDVI data outputs will be displayed in the report for visual representation purposes. Final representative mangrove health value will include;

- Mean NDVI value for each area surveyed, and
- Mean NDVI values for 2 x internal plot areas (representing the ground truthed habitat).
- Mean NDVI values for each area surveyed for both *A. marina* and *R. stylosa* as per the pilot study.

3. Results

The results of the 2025 ChEMMS campaign are summarised below. Detailed results, along with graphs and figures for each site and sampling year are presented in Appendix A to Appendix F and include a comparison of 2025 results with the outcomes of historical sampling. Laboratory reports from the 2025 monitoring survey are presented in Appendix G.

3.1. Chemical Monitoring

3.1.1. Subtidal Sediments

Subtidal sediment results, together with graphical representations of all data collected at each site to date, are presented in Appendix A. In 2025, a single exceedance of the copper DGV was recorded. No other exceedances of applicable DGVs for subtidal sediments were identified during 2025.

3.1.1.1. Cadmium

Cadmium has been analysed in subtidal sediments since 1995. During each monitoring survey, including in 2025, cadmium has remained below the DGV of 1.5 mg/kg. Cadmium levels were below 0.1 mg/kg in 2025 at all sites.

3.1.1.2. Chromium

Chromium has been analysed in subtidal sediments since 1990. The 2025 results for chromium ranged between 11.9 mg/kg (CH4) and 68.3 mg/kg (SB12) and all sites were below the DGV of 80 mg/kg.

3.1.1.3. Copper

Copper has been analysed in subtidal sediments since 1990. In 2025, an exceedance of the DGV for copper was recorded at subtidal sediment site DO2 (112 mg/kg); this represents the first DGV exceedance reported at this site. Copper concentrations across subtidal sediments ranged from 1.8 mg/kg at CH3 to 112 mg/kg at DO2.

3.1.1.4. Lead

Lead has been analysed in subtidal sediments from 1990. In 2025, lead concentrations in the subtidal sediments were between 1.8 mg/kg (CH4) and 8.2 mg/kg (SB1a) which were well below the DGV for lead of 50 mg/kg. With respect to other sites, lead concentrations were generally low and relatively stable across all locations, with KBSB sites exhibiting higher average levels than the other sites.

3.1.1.5. Mercury

Mercury concentrations at WDO sites were first analysed in 2012. All sampling results since 2012 have been below the DGV of 0.15 mg/kg, including in 2025 where concentrations at all sites were less than or equal to 0.01 mg/kg.

3.1.1.6. Nickel

Nickel has been analysed in subtidal sediments since 1990. All nickel concentrations recorded in the 2025 monitoring survey were below the DGV (21 mg/kg). Concentrations ranged between 3.9 mg/kg (CH5) and 20.8 mg/kg (SB1a).

3.1.1.7. Zinc

Zinc has been analysed in subtidal sediments since 1990. In 2025, concentrations of zinc ranged between 6.9mg/kg (CH7) and 80.3 mg/kg (DO3). Zinc concentrations have been relatively stable since data was recorded and typically below the DGV of 200 mg/kg at most sites. In general, concentrations were lower at the KGP and CZ sites than at the sites around the WDO and KBSB sites.

3.1.1.8. Hydrocarbons

TPH has been analysed in subtidal sediments from 1990. All values in 2025 were below the DGV (280 mg/kg), concentrations of normalised TPH ranged from below LoR to 49 mg/kg (DO1). Concentrations of PAH were all below the DGV for PAHs (4,000 µg/kg) in 2025. Concentrations ranged between below LoR and 228 µg/kg (SB3).

3.1.2. Intertidal sediments

Intertidal sediment results along with graphical representation of data for all sites and sampling years are presented Appendix B. Exceedances of applicable DGVs for intertidal sediments in 2025 are summarised in Table 7.

Table 7: Exceedances or applicable trigger levels for intertidal sediments.

Site	Analyte	Reported level	DGV	GV-High
WB ^R	Chromium	87.1 mg/kg	80 mg/kg	370 mg/kg
NEC	Chromium	83.5 mg/kg	80 mg/kg	370 mg/kg
WB ^R	Nickel	37.2 mg/kg	21 mg/kg	52 mg/kg
KB ^R	Nickel	25.4 mg/kg	21 mg/kg	52 mg/kg
NEC	Nickel	33.5 mg/kg	21 mg/kg	52 mg/kg
NNBDU	Zinc	248 mg/kg	200 mg/kg	410 mg/kg

3.1.2.1. Cadmium

Limited variation was seen in the cadmium concentrations of intertidal sediments between sites during 2025. All site concentrations were <0.1 mg/kg except 0.2 mg/kg was detected at NNBDU.

3.1.2.2. Chromium

In 2025, concentrations of chromium exceeded the DGV of 80 mg/kg at WB^R (87.1 mg/kg) and NEC (83.5 mg/kg). All other sites reported concentrations between 10.2 mg/kg (SCB) and 56.9 mg/kg (KB^R). The GV-High value of 370 mg/kg was not exceeded at any of the sites.

3.1.2.3. Copper

The concentration of copper in intertidal sediments in 2025 was low, with all concentrations below the DGV of 65 mg/kg. Copper concentrations ranged 1.2 mg/kg (NB^R) to 20.1 mg/kg (WB^R & KB^R).

3.1.2.4. Lead

Lead concentrations in intertidal sediments in 2025 were low with all lead concentrations below the DGV of 50 mg/kg. Lead concentrations ranged from 1.1 mg/kg (NB^R) to 9.8 mg/kg (NEC).

3.1.2.5. Mercury

Limited variation was seen in the mercury concentrations of intertidal sediments between sites during 2025. All sites were below the DGV of 0.15 mg/kg. Mercury concentrations at most sites were below the LoR. Detectable concentrations were observed at WB^R, NNBD, NEC, KB^R and NNBDU, with the highest concentration recorded at NEC (0.14 mg/kg).

3.1.2.6. Nickel

In 2025, concentrations of nickel exceeded the DGV of 21 mg/kg at WB^R (37.2 mg/kg), KB^R (25.4 mg/kg) and NEC (33.5 mg/kg). All other sites reported concentrations between 3.8 mg/kg (NB^R & SCB) and 14.3 mg/kg (CC^R). The GV-High value of 52 mg/kg was not exceeded at any of the sites.

3.1.2.7. Zinc

In 2025, concentrations of zinc exceeded the DGV of 200 mg/kg at NNBDU (248 mg/kg). All other sites reported concentrations between 4 mg/kg (NB^R) and 77.9 mg/kg (NEC). The GV-High value of 410 mg/kg was not exceeded at any of the sites.

3.1.2.8. Hydrocarbons

TPH concentrations in 2025 were variable among sites, normalised TPH ranged from 2 mg/kg (KB^R) to 269 mg/kg (CC^R). Concentrations of MDEA during 2025 were below the LoR at all sites.

3.1.3. North East Creek Intertidal sediments

Results of the North East Creek intertidal sediments investigation along with graphical representation of historical data are provided in Appendix C. All exceedances of applicable DGVs for the North East Creek intertidal sediments are summarised in Table 8, as well as a detailed comparison between previous data in sections 3.1.3.1, 3.1.3.2 and 3.1.3.3.

Table 8: Exceedances of applicable levels for the North East Creek intertidal sediments.

Site	Analyte	Reported level	DGV	GV-High
NEC1-B	Cadmium	2 mg/kg	1.5 mg/kg	10 mg/kg
NEC1-B	Zinc	296 mg/kg	200 mg/kg	410 mg/kg
NEC1-B	Recoverable Mercury (FIMS)	0.22 mg/kg	0.15 mg/kg	1 mg/kg
NEC5-A	Recoverable Mercury (FIMS)	0.27 mg/kg	0.15 mg/kg	1 mg/kg

3.1.3.1. Metals

Metal concentrations at all sites were below the applicable DGVs, with the exception of NEC1-B, where exceedances were recorded for cadmium, zinc and recoverable mercury, and NEC5-A, where an exceedance was recorded for recoverable mercury (Table 8).

Recoverable mercury exceeded the DVG (0.15 mg/kg) at NEC1-B (0.22 mg/kg) and NEC5-A (0.27mg/kg). Dilute acid extracted mercury was used to determine the bioavailability of mercury in the sediments. Results were 0.02 mg/kg for NEC1-B and below LoR for NEC5-A which suggests that Hg present in the sediments should not pose an in-situ risk to the environment. It is also worth noting that, although no exceedance was recorded at NEC6-A in 2025, the recoverable mercury concentration (0.15 mg/kg) was equal to the applicable DGV.

No sites exceeded the GV-high value for any metals in 2025.

Concentrations of all metals were generally higher at NEC1, NEC5 & NEC6 sites, compared to other sites.

3.1.3.2. BTEXN

Benzene, toluene, ethylbenzene, Xylenes and Naphthalene (BTEXN) concentrations in North East Creek intertidal sediments in 2025 were all below the LoR at all sites.

3.1.3.3. Hydrocarbons

Similarly to 2024, TPH results in 2025 at all sites were all below the DGV of 280 mg/kg. TPH concentrations ranged between 9 mg/kg (NEC1-A) and 112 mg/kg (NEC6-B). Concentrations of total PAH at all sites were well below the DGV of 4,000 µg/kg in 2025.

3.1.4. Oysters

Oyster monitoring results are summarised below, with graphical representation of data from all sites and sampling years presented Appendix D.

3.1.4.1. Cadmium

In 2025, a single exceedance of the FSANZ guideline value for cadmium (2 mg/kg) was recorded in oysters at site WC^R (2.5 mg/kg). Apart from this exceedance, concentrations ranged from 0.35 mg/kg (CH1) to 1.3 mg/kg (CH7^R).

3.1.4.2. Chromium

Chromium concentrations in oyster tissue in 2025 were comparable to those measured in 2024. There is no FSANZ guideline level for chromium against which results can be assessed. Concentrations across sites ranged from 0.3 mg/kg at CH1, CH4, CH7^R, S7, S8 and HC to 1.5 mg/kg at CH4a.

3.1.4.3. Copper

There is no FSANZ maximum level for copper, however, the GEL is 30 mg/kg. The GEL has been exceeded at all sites in most years on the western side of the Burrup Peninsula, including in 2025. Copper exceeded the GEL at all impact sites and two reference sites (CH6^R and CH7^R) in 2025. However, WC^R, NB^R, HC^R and CC^R exhibited no exceedances of the GEL. Values ranged from 13 mg/kg (CC^R) to 210 mg/kg (CH1). Despite the exceedances in 2025, results show that copper concentrations for all sites were generally lower than in 2021 with a significant reduction in concentrations when compared to previous years (prior to 2021).

3.1.4.4. Lead

Lead concentrations in oyster tissue throughout the historical monitoring, including in 2025, have remained low, and well below the FSANZ maximum level of 2 mg/kg. Concentrations at all sites were below 0.2 mg/kg, with the exception of CH4, where a concentration of 0.4 mg/kg was recorded.

3.1.4.5. Mercury

Mercury concentrations throughout the historical monitoring period, including in 2025, have remained low and below the FSANZ maximum level of 0.5 mg/kg. In 2025, concentrations at both monitored sites (DO1 and DO2) were 0.013 mg/kg.

3.1.4.6. Nickel

Nickel concentrations in 2025, consistent with 2024 results, were lower at most sites compared with concentrations measured in 2021. There is no FSANZ maximum level or GEL criterion for nickel in oysters; however, concentrations across sites ranged from 0.3 mg/kg at CH1, CH6^R, CH7^R, CH7a^R, WC^R, HC^R and CC^R to 0.9 mg/kg at CH4a.

3.1.4.7. Zinc

Zinc concentrations in oyster tissue exceeded the GEL (290 mg/kg) at all impact sites. Exceedances ranged from 580 mg/kg (CH5) to 760 mg/kg (CH4). Zinc levels in oyster tissue have been exceeded at most sites during previous monitoring surveys as part of this program. All reference sites on the northern and eastern sides of the Burrup Peninsula (NB^R, WC^R, HC^R, CC^R) showed concentrations below the GEL since they were first sampled (2017) with a range between 40 mg/kg (CC^R) and 71 mg/kg (NB^R) for the 2025 survey. Site CH6^R on the western side of the Burrup Peninsula exceeded the GEL in 2025 (350 mg/kg).

3.1.4.8. Hydrocarbons

Hydrocarbon concentrations (TPH C6-9, TPH C10-C14 and TPH C29-36 and PAHs) at all sites during the 2025 monitoring campaign were below their respective LoRs, which has been the typical trend for all years surveyed. Different from previous years, TPH C15-28 has been detected at sites CH1, CH5, CH6^R, CH7^R, CH7a^R and S5, range from 100 mg/kg (CH7a^R) to 730 mg/kg (CH1).

3.1.4.9. Shell Lengths

Shell lengths are measured as part of the monitoring survey to ensure adult oysters are being monitored within the 50 mm and 120 mm range. Average shell lengths in 2025 ranged from 34.6 mm (HC^R) to 83.5 mm (S1), with a mean of 61.5 mm for the entire subset (Figure 12). As per previous years, average shell lengths were shortest at the sites on the Eastern side of the Burrup (HC^R, CC^R, WC^R, NB^R).

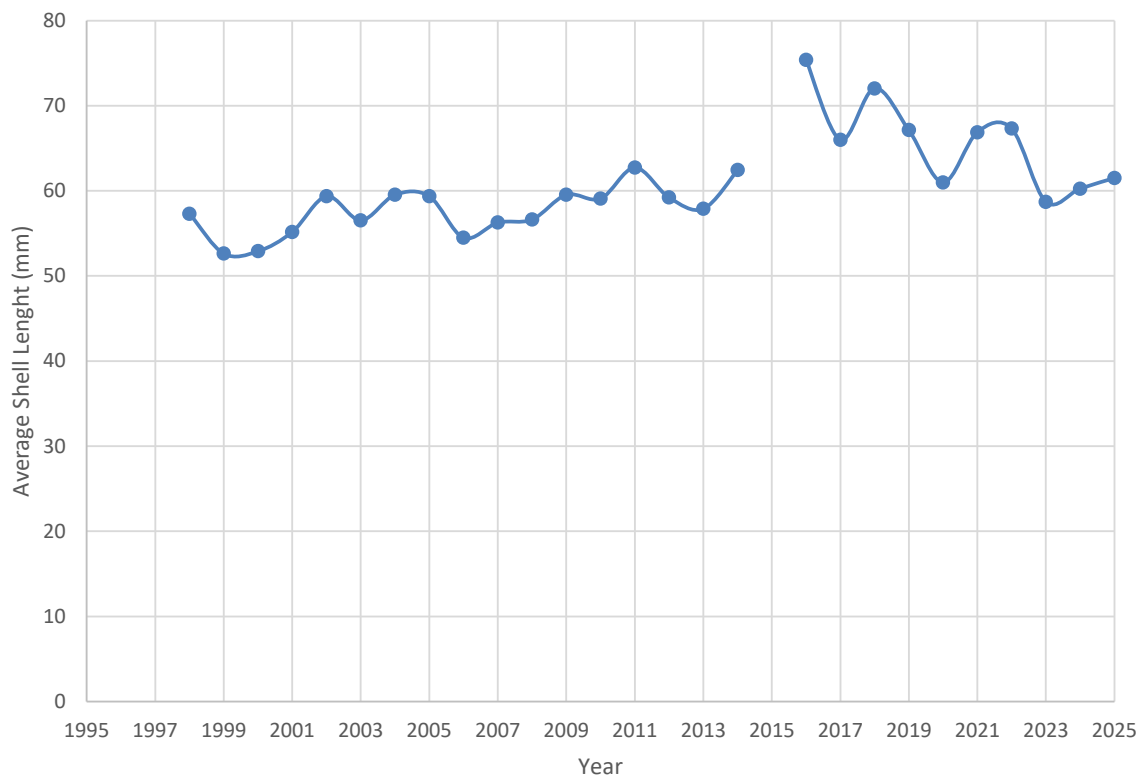


Figure 12: Historical dataset of average shell lengths

Shell lengths of oysters in 2025 were also correlated against copper and zinc (analytes where exceedances were recorded) in the oyster biota results (Figure 13 & Figure 14). There was a strong positive correlation seen between shell length and copper ($R^2 = 0.725$) and between shell length and zinc ($R^2 = 0.798$).

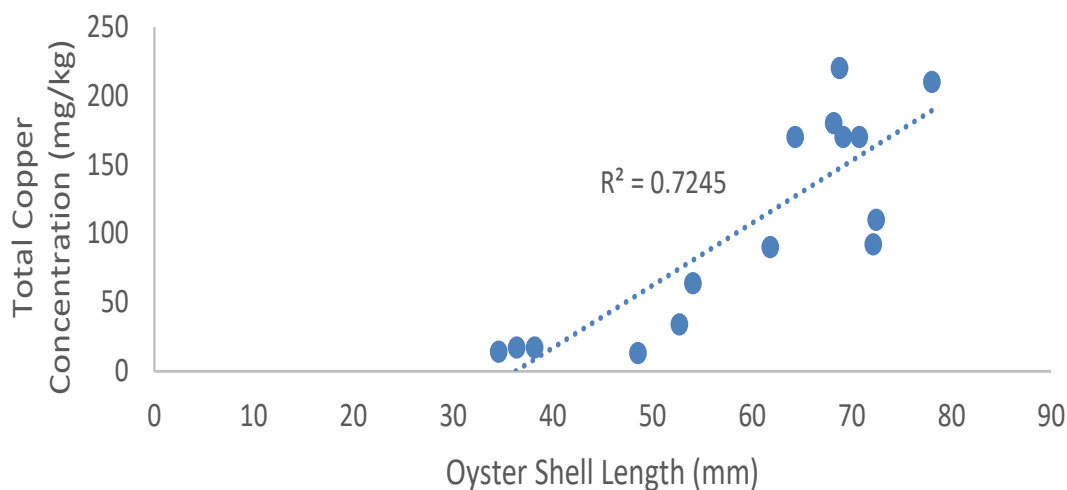


Figure 13: Correlation between shell length and total copper concentration

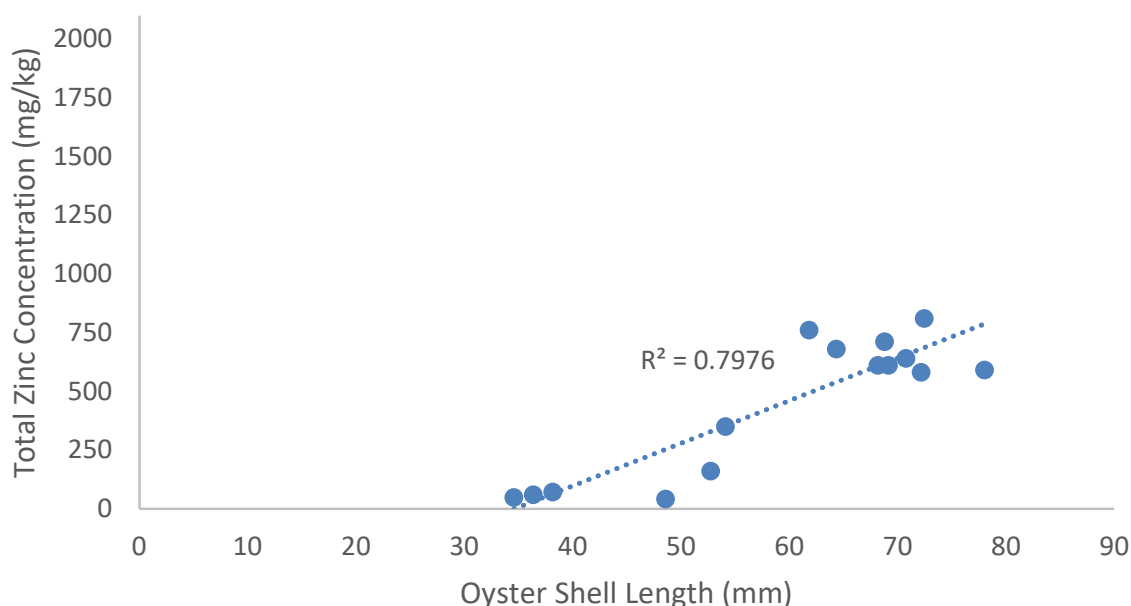


Figure 14: Correlation between shell length and total zinc concentration

3.1.4.10. Moisture Content

Correlation between the moisture content and metal concentration was also relatively low (R^2 value <0.05). Moisture content in 2025 ranged between 71.4% (CH2) and 77% (DO1) which was comparable to previous years.

3.1.4.11. Lipid Content

Lipid concentration in oysters in 2025 were comparable to 2024. Lipid content in 2025 ranged from 6% (WC^R) to 29% (CH2). Correlation between the lipid concentration and metal concentration was also relatively low, with only cadmium having a moderate negative correlation returning an R^2 value of 0.399.

3.1.5. Mud Whelks

Mud whelk monitoring results along with graphical representation of data from all sites and sampling years are presented in Appendix E.

3.1.5.1. Cadmium

Cadmium concentrations in mud whelk tissues in 2025 were below the FSANZ maximum level of 2 mg/kg at all sites. Values ranged from 0.06 mg/kg (NNB and NEC) to 0.3 mg/kg (at WC^R). Results were comparable to previous sampling years.

3.1.5.2. Chromium

There is no FSANZ maximum level or GEL criteria for chromium in mud whelks, however results are comparable to previous years within the ChEMMS scope. In 2025, concentrations ranged between 0.7 mg/kg (NEC) and 1.8 mg/kg (CZ^R). Results were comparable to previous sampling years.

3.1.5.3. Copper

In 2025, a single exceedance of the FSANZ GEL value for copper (30 mg/kg) was recorded in mud whelks at site WB^R (39 mg/kg). Apart from this exceedance, concentrations ranged from 9.1 mg/kg (WC^R) to 28 mg/kg (NEC).

3.1.5.4. Lead

The FSANZ maximum level for lead in molluscs is 2 mg/kg, which has not been exceeded at any site during the monitoring since 2012. Lead concentrations in 2025 were similar to values seen in previous sampling years and all sites were below 0.2 mg/kg.

3.1.5.5. Mercury

Mercury concentrations in mud whelk tissues in 2025 were below the FSANZ maximum level of 0.5 mg/kg at all sites. Values ranged from 0.006 mg/kg (at NNB) to 0.015 mg/kg (at WB^R and WC^R).

3.1.5.6. Nickel

There is no FSANZ maximum level or GEL for nickel. Values in 2025 were comparable to 2024 and ranged from 0.3 mg/kg (NEC) to 1.4 mg/kg (CC^R).

3.1.5.7. Zinc

The zinc GEL is 290 mg/kg, which has not been exceeded since 2012. In 2025, zinc levels ranged between 12 mg/kg (CC^R) and 23 mg/kg (NNB).

3.1.5.8. Hydrocarbons

All hydrocarbon concentrations in mud whelk tissues from all sites were all below their respective LoRs in 2025, which has been a similar trend to previous years.

3.1.5.9. Shell lengths

In 2025, mean lengths at the sites ranged between 84 mm at WC^R to 115 mm at NEC. Shell lengths at all sites were comparable to previous years an average of 105 mm across all sites.

3.2. Mangrove Monitoring

During the 2025 monitoring survey, seven sites were visited, and three plots of each species were monitored, except at HC where only *A. marina* was present and NEC, where three additional plots were undertaken for *A. marina*. A summary of the species composition, phenology, seedling count, dust coverage and insect damage are presented in Table 9.

Table 9: Mangrove health assessment summary

Location		<i>Avicennia marina</i>	<i>Rhizophora stylosa</i>	<i>Ceriops australis</i>	<i>Bruguiera sp.</i>	Phenology	Seedling	Yellow leaves	Insect Damage	Dust coverage
North East Creek	NEC A1	100	0	0	0	NP	NP	<10%	<10%	<10%
	NEC A2	100	0	0	0	Budding	NP	<10%	<10%	<10%
	NEC A3	100	0	0	0	Budding	NP	<10%	<10%	<10%
	NEC A4	100	0	0	0	NP	NP	<10%	<10%	<10%
	NEC A5	100	0	0	0	NP	NP	<10%	<10%	<10%
	NEC A6	100	0	0	0	NP	NP	<10%	<10%	<10%
	NEC R1	0	100	0	0	Budding	NP	<10%	<10%	10-25%
	NEC R2	0	100	0	0	Budding	NP	<10%	<10%	<10%
	NEC R3	0	100	0	0	Budding	NP	<10%	<10%	10-25%
No Name Bay	NNBA A1	95	5	0	0	NP	NP	25-50%	<10%	<10%
	NNBA A2	80	20	0	0	NP	3	25-50%	<10%	<10%
	NNBA A3	100	0	0	0	NP	NP	10-25%	<10%	10-25%
	NNB R1	100	0	0	0	Budding	NP	10-25%	<10%	<10%
	NNB R2	100	0	0	0	Budding	NP	10-25%	<10%	<10%
	NNB R3	60	40	0	0	Budding	NP	25-50%	<10%	<10%
Conzinc Bay	CZ A1	100	0	0	0	NP	20	10-25%	<10%	<10%
	CZ A2	100	0	0	0	Budding	NP	10-25%	<10%	<10%
	CZ A3	100	0	0	0	NP	NP	10-25%	<10%	<10%
	CZ R1	5	95	0	0	Budding	NP	<10%	<10%	<10%

	CZ R2	0	100	0	0	Budding	NP	<10%	<10%	<10%
	CZ R3	0	100	0	0	Budding/ Flowering	NP	<10%	<10%	<10%
Withnell Bay	WB A1	100	0	0	0	Budding	NP	10-25%	<10%	<10%
	WB A2	100	0	0	0	Budding	NP	<10%	<10%	<10%
	WB A3	100	0	0	0	Budding	NP	10-25%	<10%	<10%
	WB R1	0	100	0	0	Budding	NP	10-25%	<10%	<10%
	WB R2	0	100	0	0	Budding	NP	<10%	<10%	<10%
	WB R3	5	95	0	0	Budding	NP	10-25%	<10%	<10%
Hearson Cove	HC A1	100	0	0	0	NP	NP	10-25%	<10%	<10%
	HC A2	100	0	0	0	NP	NP	10-25%	<10%	<10%
	HC A3	100	0	0	0	NP	NP	10-25%	<10%	<10%
Watering Cove	WC A1	95	5	0	0	NP	NP	10-25%	10-50%	<10%
	WC A2	100	0	0	0	NP	NP	10-25%	<10%	<10%
	WC A3	95	5	0	0	NP	NP	10-25%	<10%	<10%
	WC R1	10	90	0	0	Budding	NP	<10%	<10%	<10%
	WC R2	0	100	0	0	Budding	NP	<10%	<10%	<10%
	WC R3	0	100	0	0	Budding	NP	<10%	<10%	<10%
King Bay	KB A1	100	0	0	0	NP	NP	10-25%	<10%	<10%
	KB A2	85	15	0	0	NP	NP	10-25%	<10%	<10%
	KB A3	95	5	0	0	NP	NP	25-50%	<10%	<10%
	KB R1	5	95	0	0	Flowering	NP	10-25%	<10%	<10%
	KB R2	0	100	0	0	Budding	NP	10-25%	<10%	<10%
	KB R3	5	95	0	0	Budding	NP	10-25%	<10%	<10%
*NP = not present										

3.2.1.1. Species Cover

As shown in Table 9, species coverage in 2025 was similar to previous reports with continued low within plot variability, with most plots dominated by a single mangrove taxon. Minor mixed composition was recorded at a small number of plots, including several at NNB, WC and KB, where the secondary taxa contributed up to 20% cover. More pronounced mixing was observed at NNB R3, where *A. marina* contributed 40% cover.

3.2.1.2. Phenology

Budding, flowering or fruiting was only recorded where observed within the designated plots. In 2025, phenological activity was most frequently observed in *R. stylosa* plots, with budding or flowering recorded

Phenological activity in *A. marina* plots was less common but was recorded at NEC, CZ and WB.

3.2.1.3. Seedlings

Seedlings were rarely observed across all sites in 2025. Seedlings were recorded within *A. marina* plots NNB A2 (3 seedlings) and CZ A1 (20 seedlings). No seedlings were observed in *R. stylosa* plots.

3.2.1.4. Yellow Leaves

The proportion of yellow leaves varied across sites in 2025 (Table 9). Most plots exhibited <10% or 10 – 25% yellowing leaves. Higher leaf yellowing (25 -50%) was recorded at NNB A1, NNB A2, NNB R3 and KB A3.

Tree health was assessed using the proportion of yellow leaves as an indicator of vigour. Overall, the predominance of plots with <25% yellow leaves indicates that mangrove health remained generally good across the monitoring sites in 2025. Higher levels of leaf yellowing were observed at a limited number of plots, specifically NNB A1, NNB A2, NNB R3 and KB A3.

3.2.1.5. Insect Damage

Insect damage was low across all plots in 2025, with most <10% damage recorded at all plots, with the exception of WC A1, which exhibited 10 – 50% insect damage.

3.2.1.6. Dust Coverage

Dust coverage was generally low, with most plots exhibiting <10% coverage. Slightly elevated dust coverage (10-25%) was recorded at NEC R1, NEC R3 and NNB A3.

3.2.1.7. Canopy Cover

Overall, canopy cover in 2025 was broadly consistent with recent years, with most sites exhibiting stable to increasing canopy cover relative to the preceding five-year period. NEC, WB^R, WC^R and KB^R continued to exhibit the highest average canopy cover in recent years, particularly within *R. stylosa* assemblages. Minimal difference was observed between sites on the western and eastern sides of the Burrup Peninsula (WC^R and HC^R, respectively). While year to year fluctuations are evident at some sites, no sustained decline in canopy cover was observed in 2025.

3.2.1.8. General Observation

It was noted that damage to trees, likely from storm damage was observed at Whithnell Bay (A2 and A3), No Name Bay (A3) and North East Creek (R1, R2, R3 and A3).

3.2.2. NDVI Data Analysis

Similarly to 2024, KB^R had the highest mean NDVI value of 0.74 and NEC had the lowest NDVI value of 0.61. In 2025, sites exhibited a higher mean NDVI on average when compared to previous surveys for total site area and for the West and East survey areas. Ground truther survey areas showed KB^R, also having the highest NDVI value for the East survey area (0.87) and NNB having the highest NDVI values for the West survey area (0.82). As with previous surveys NEC recorded the lowest NDVI values for both East and West survey areas (0.57 and 0.51 respectively - Figure 15). Consistent with previous surveys, KB^R was the largest site, with 19.72 ha of NDVI data collected while NNB was the smallest with only 1.74 ha of NDVI collected (Table 10).

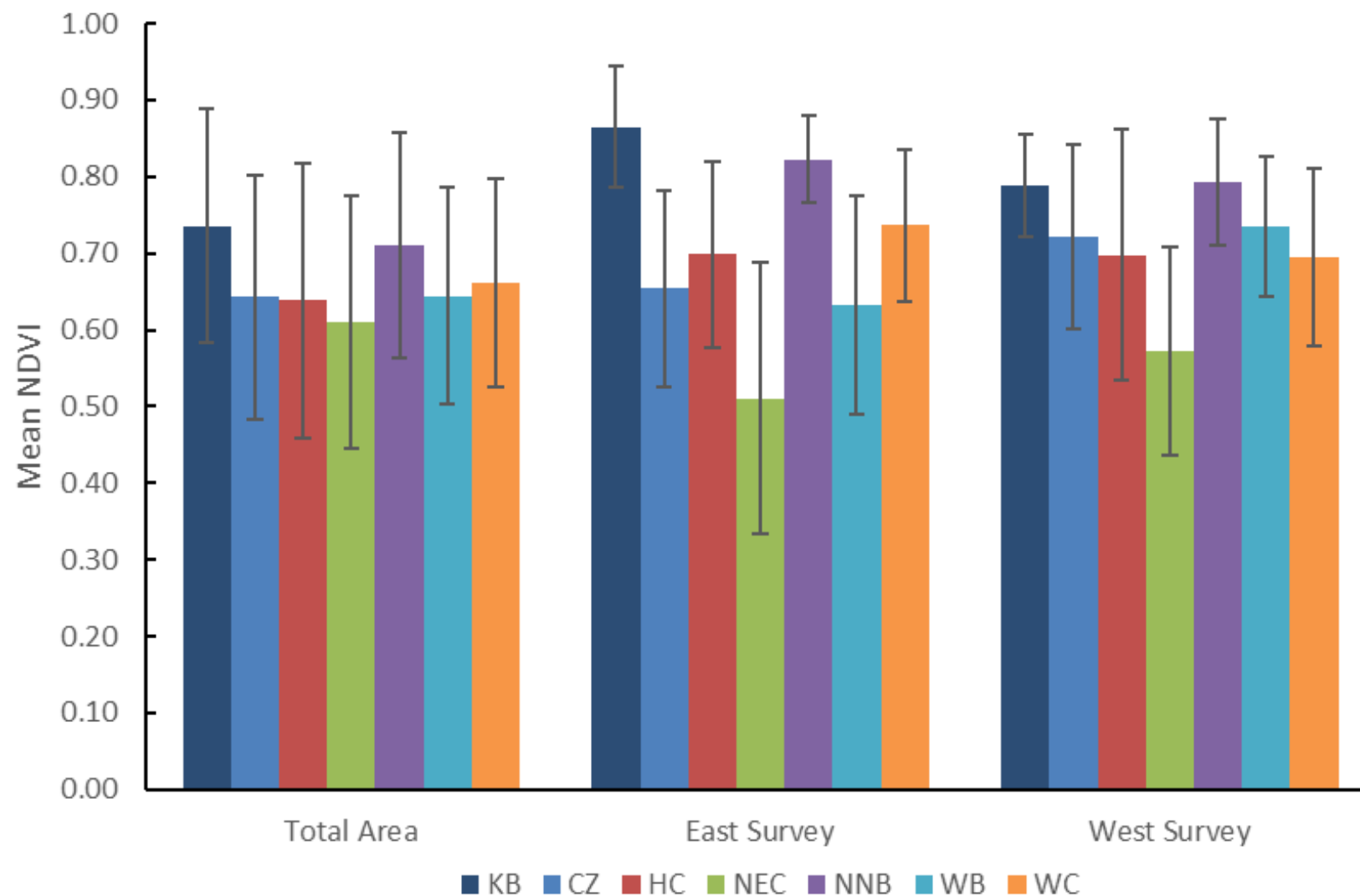


Figure 15: Mean NDVI data (with standard deviation illustrated) for all locations in 2025

Table 10: 2025 Mangrove NDVI data

Site	Parameter	Total Area	North	East	South	West
CZ	ha of vegetation (all, E, W)	4.81	-	0.13	-	0.13
	Mean	0.64	-	0.65	-	0.72
	Std Dev	0.16	-	0.13	-	0.12
HC	ha of vegetation (all, E, W)	1.47	-	0.09	-	0.10
	Mean	0.64	-	0.70	-	0.70
	Std Dev	0.18	-	0.12	-	0.16
NEC	ha of vegetation (all, N, S)	6.55	0.08	-	0.23	N/A
	Mean	0.61	0.51	-	0.57	N/A
	Std Dev	0.16	0.18	-	0.14	N/A
NNB	ha of vegetation (all, E, W)	1.42	-	0.15	-	0.18
	Mean	0.71	-	0.82	-	0.79
	Std Dev	0.15	-	0.06	-	0.08
WB	ha of vegetation (all, E, W)	3.62	-	0.13	-	0.16
	Mean	0.64	-	0.63	-	0.74
	Std Dev	0.14	-	0.14	-	0.09
WC	ha of vegetation (all, E, W)	11.10	-	0.18	-	0.20
	Mean	0.66	-	0.74	-	0.69
	Std Dev	0.14	-	0.10	-	0.12
KB	ha of vegetation (all, N, S)	19.72	0.31	-	0.26	-
	Mean	0.74	0.87	-	0.79	-
	Std Dev	0.15	0.08	-	0.07	-
Total ha of vegetation		48.70	0.39	0.68	0.49	0.77

3.2.3. MVI Assessment

The 2025 campaign represents the tenth year that an annual NDVI data set has been completed allowing for data to be compared to a nine-year MVI trigger value (as 2025 data cannot be used to derive the MVI against its own dataset). Overall site areas recorded mean NDVI values well above their respective MVI and ML (MVI – 20%) values (Table 11 and Figure 16). Similar trends were seen at both smaller survey areas (Table 12 - Table 13 and Figure 17 to Figure 18), with values being well above the

respective MVI and ML values. Since 2022, NEC has shown a gradual decline in mean NDVI values, however during the 2025 survey NDVI has increased (Figure 26).

Table 11: MVI and ML trigger values for overall site area from NDVI mangrove monitoring. Values have been rounded to 2 decimal points.

Site	9 Year MVI	ML	2025 Mean NDVI Values	± of ML
CZ	0.47	0.38	0.64	+0.27
HC	0.38	0.31	0.64	+0.33
NEC	0.44	0.35	0.61	+0.26
NNB	0.49	0.40	0.71	+0.32
WB	0.45	0.36	0.64	+0.29
WC	0.46	0.37	0.66	+0.29
KB	0.52	0.41	0.74	+0.32

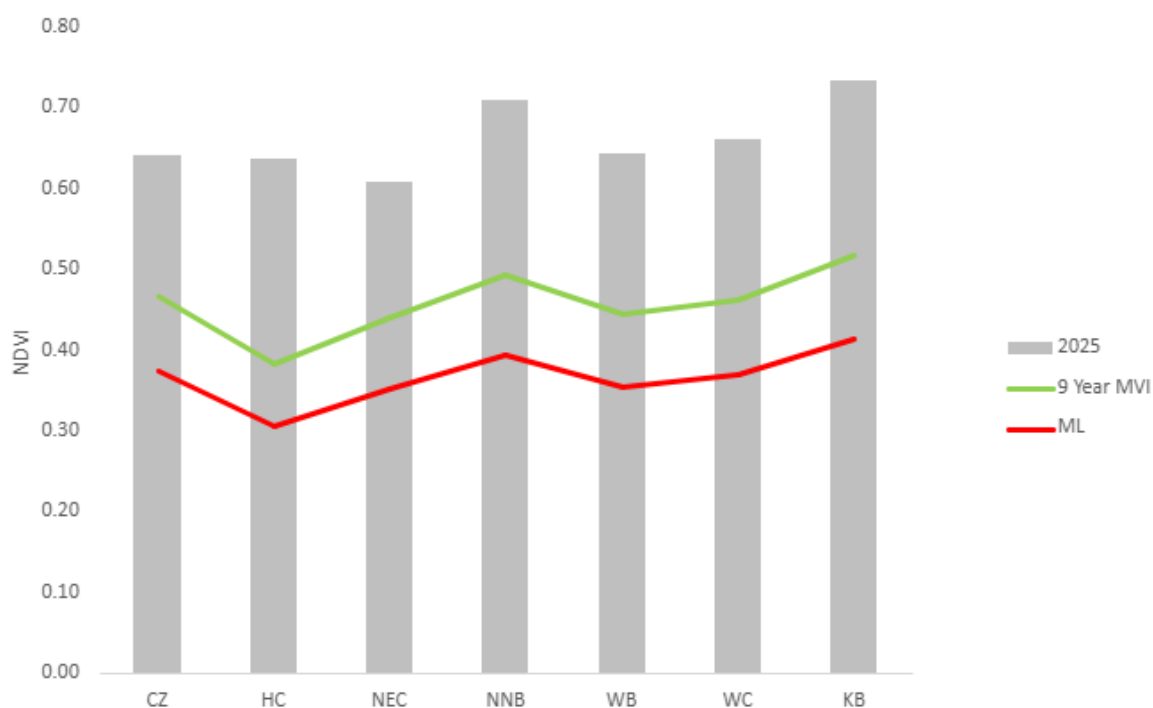


Figure 16: NDVI data compared to the 9-year MVI and ML for overall NDVI site areas.

Table 12: MVI and ML trigger values for North and East survey areas from NDVI mangrove monitoring. Values have been rounded to 2 decimal points.

Site	9 Year MVI	ML	2025 Mean NDVI Values	± of ML
CZ East Area	0.54	0.43	0.65	+0.23
HC East Area	0.44	0.36	0.70	+0.34
NEC North Area	0.41	0.33	0.57	+0.25
NNB East Area	0.61	0.49	0.79	+0.30
WB East Area	0.49	0.39	0.63	+0.24

WC East Area	0.58	0.46	0.74	+0.27
KB North Area	0.61	0.49	0.87	+0.38

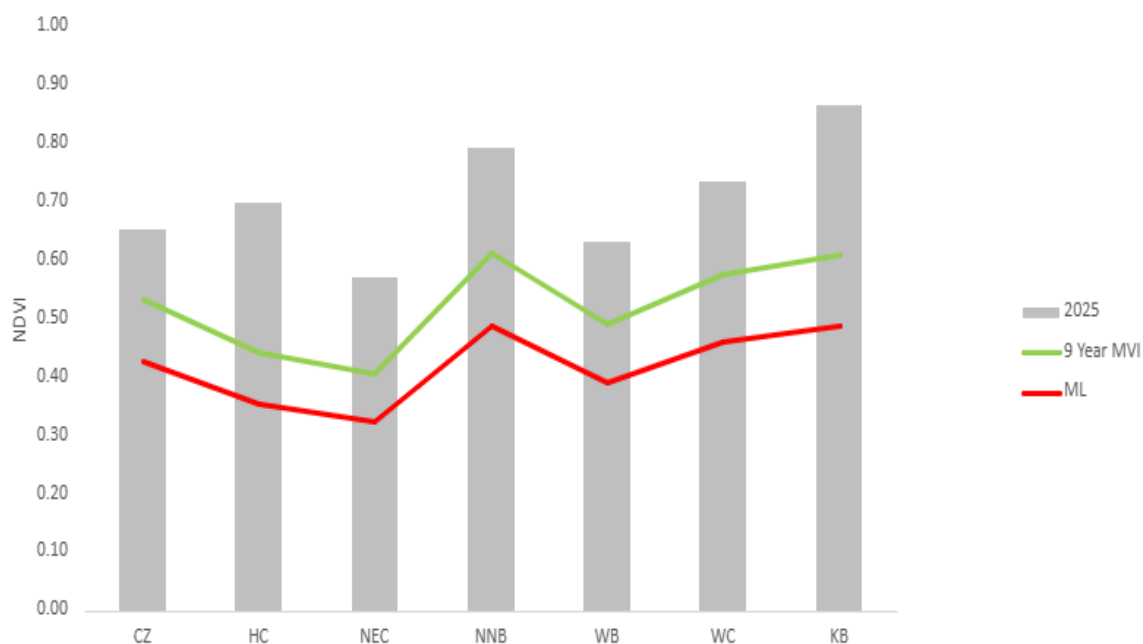


Figure 17: NDVI data compared to the 9-year MVI and ML for North and East NDVI survey areas.

Table 13: MVI and ML trigger values for South and West survey areas from NDVI mangrove monitoring. Values have been rounded to 2 decimal points.

Site	9 year MVI	ML	2025 Mean NDVI Values	± of ML
CZ West Area	0.57	0.46	0.72	+0.27
HC West Area	0.44	0.35	0.70	+0.35
NEC South Area	0.36	0.28	0.51	+0.23
NNB West Area	0.59	0.47	0.82	+0.35
WB West Area	0.58	0.47	0.74	+0.27
WC West Area	0.51	0.41	0.69	+0.29
KB South Area	0.66	0.53	0.79	+0.26



Figure 18: NDVI data compared to the 9-year MVI and ML for South and West NDVI survey areas.

3.2.4. Mangrove Mapping Outputs

The mangrove extent health mapping resulted in the creation of polygons covering approximately 59 ha in total. NDVI outputs for all sites are displayed in Figure 19 through to Figure 25. Visible mangrove habitat outside of the clipped NDVI polygons is due to using older satellite imagery for the base layer of the image. Visible mangrove habitat inside of the clipped NDVI polygons at Conzinc Bay, North East Creek and Watering Cover, which does not have an associated NDVI colour value, is due to excessive wind speeds impacting the quality of the UAV imagery during sampling. While data was recorded in each instance, the photogrammetry was not usable for NDVI analyses.

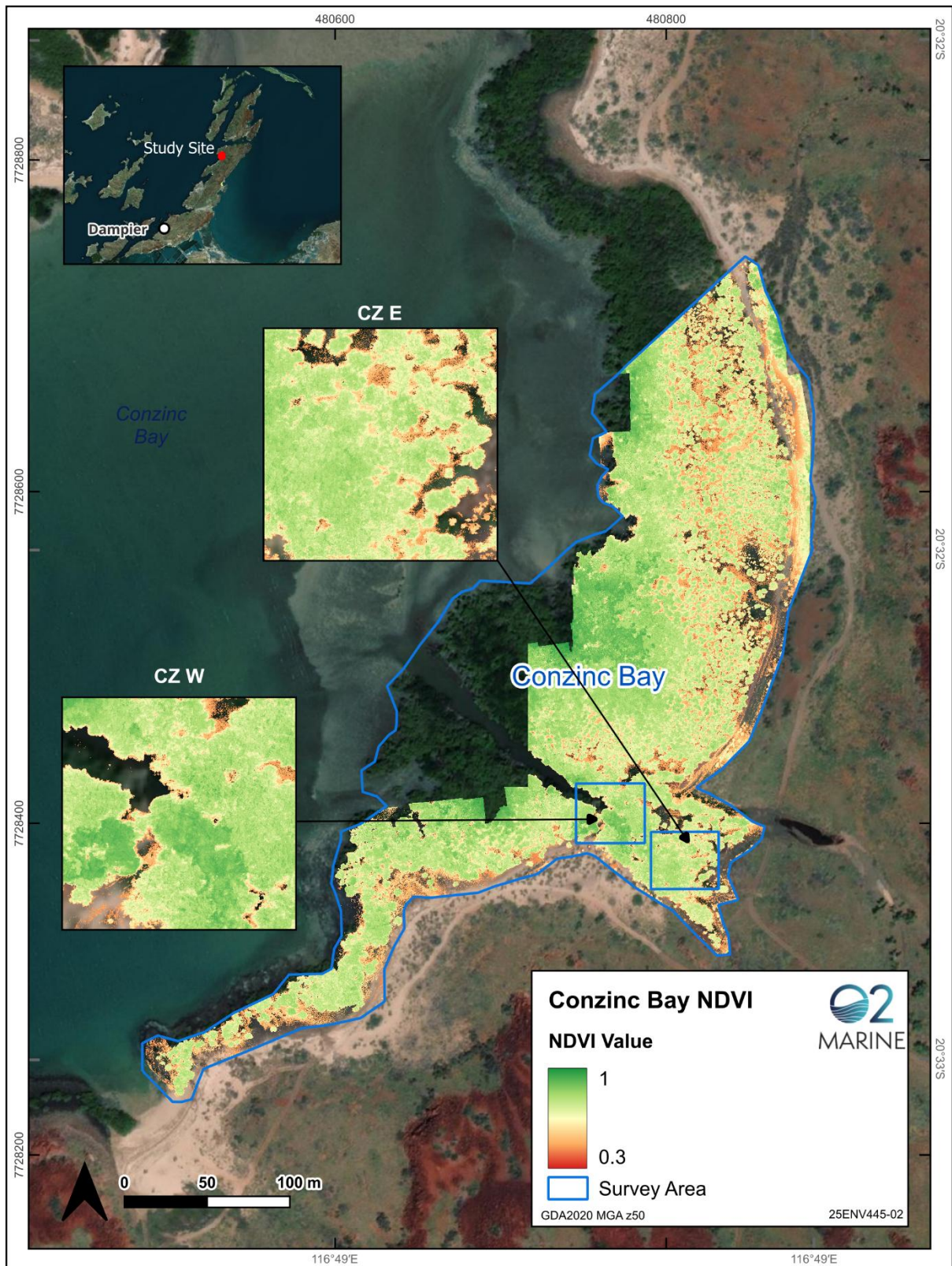


Figure 19: Conzinc Bay NDVI output imagery

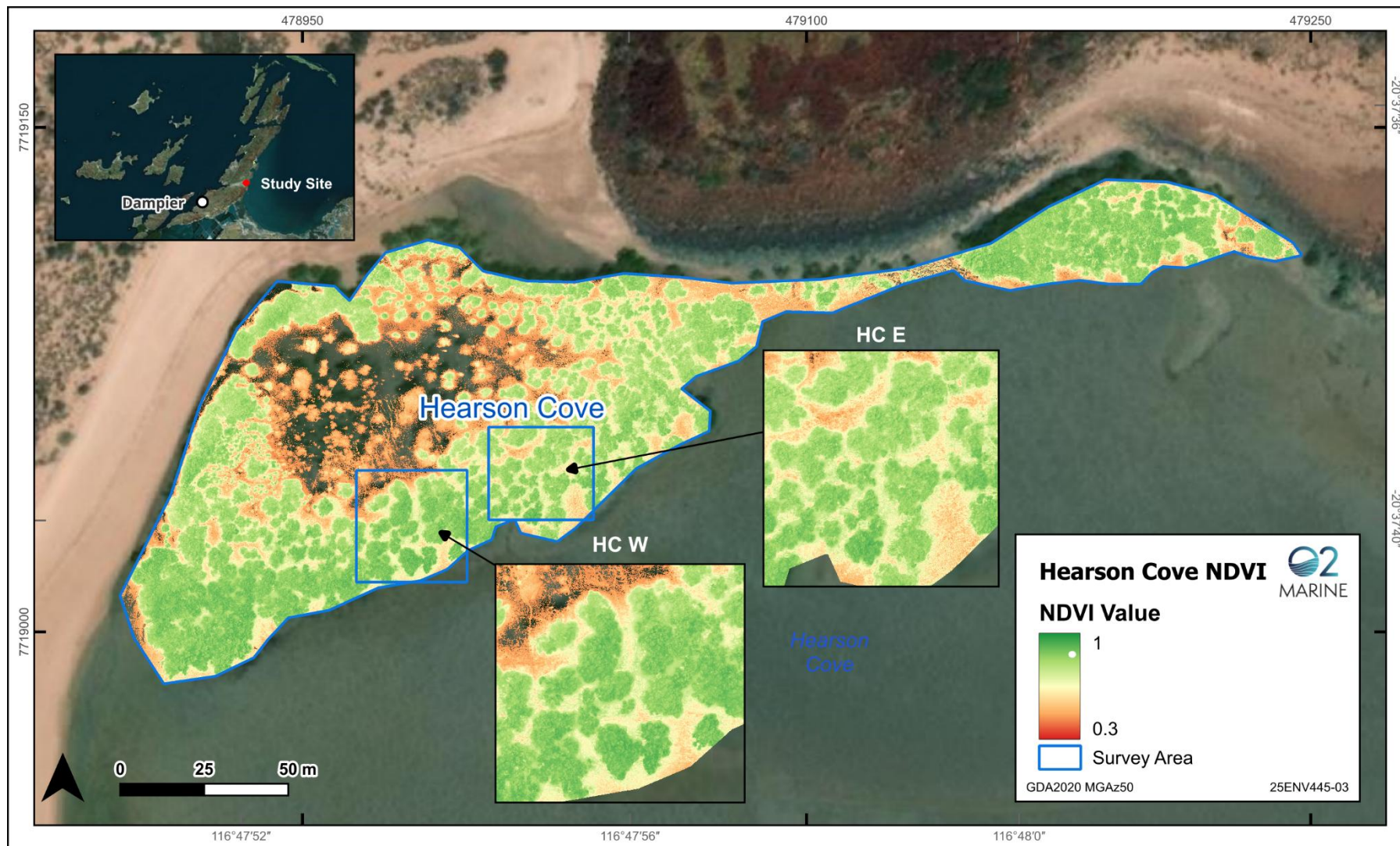


Figure 20: Hearson Cove NDVI output imagery

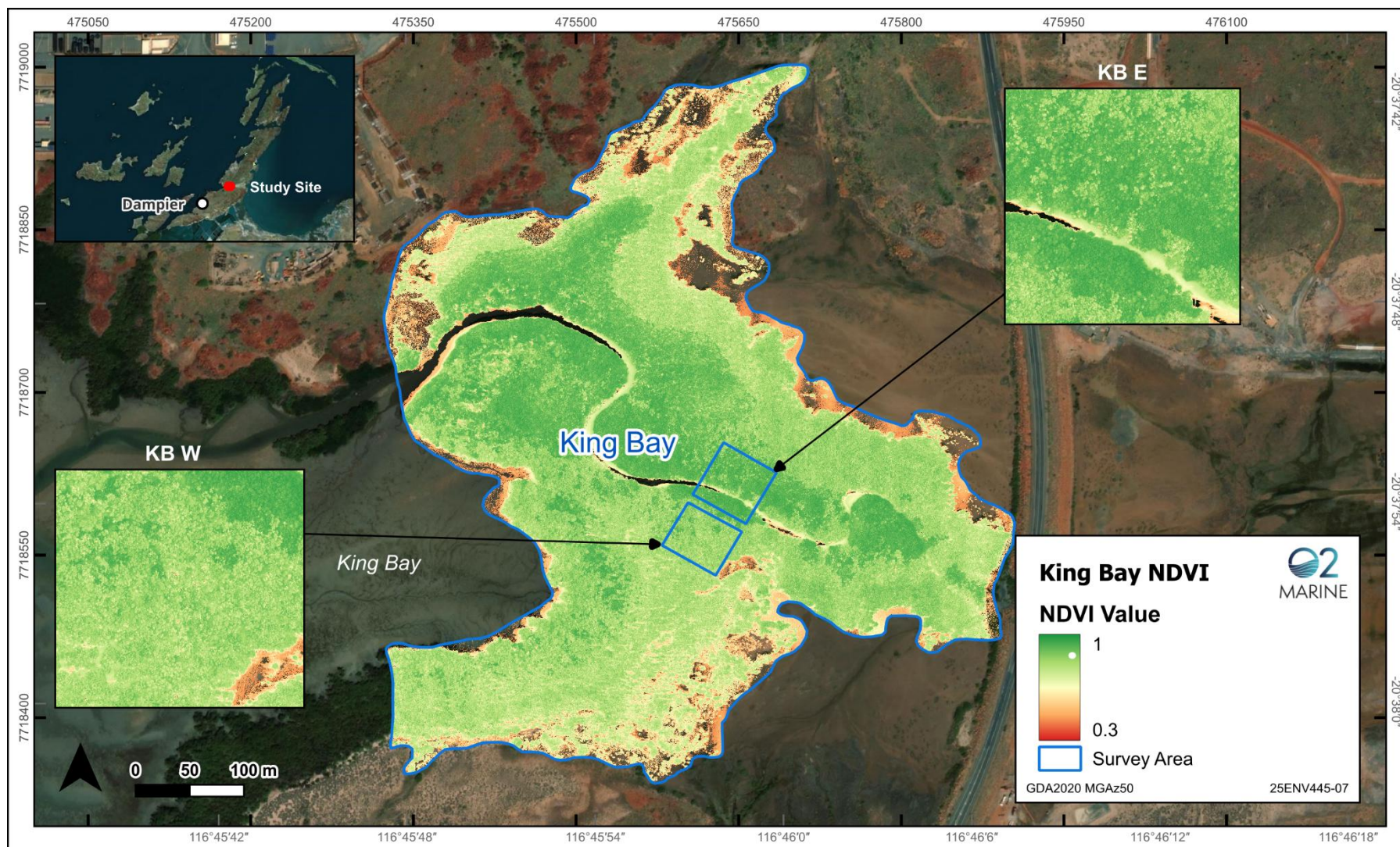


Figure 21: King Bay NDVI output imagery

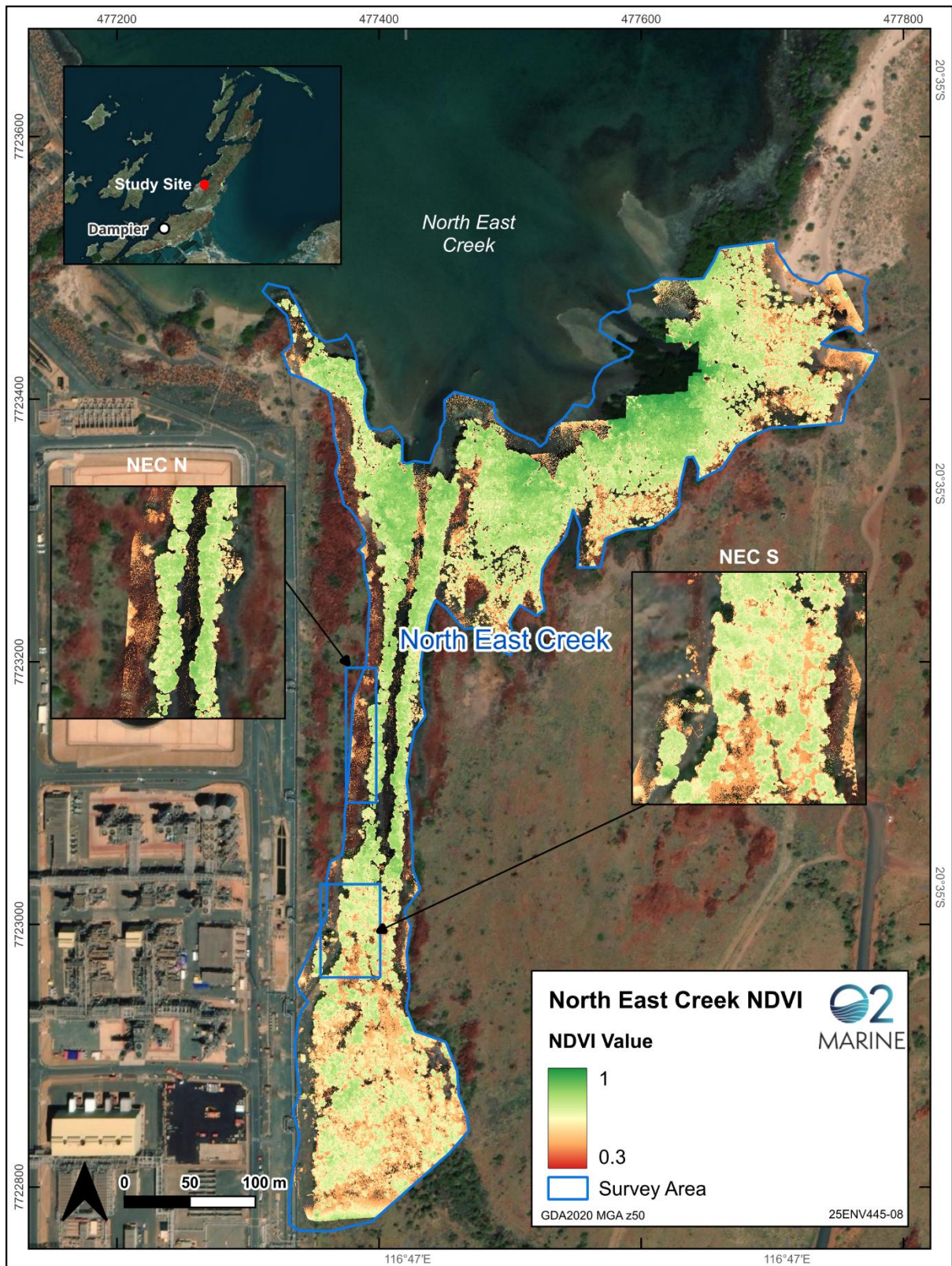


Figure 22: North East Creek NDVI output imagery

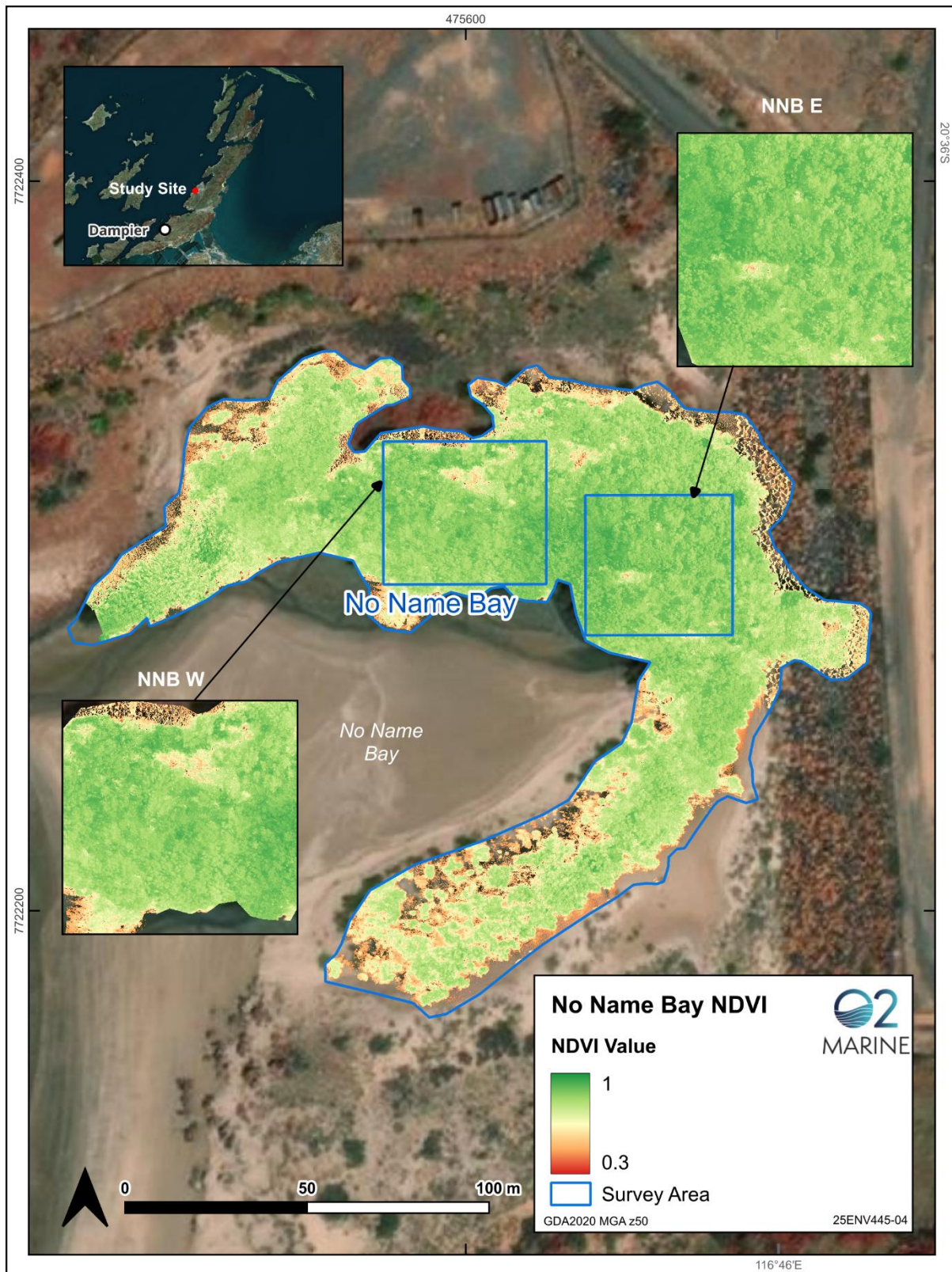


Figure 23: No Name Bay NDVI output imagery

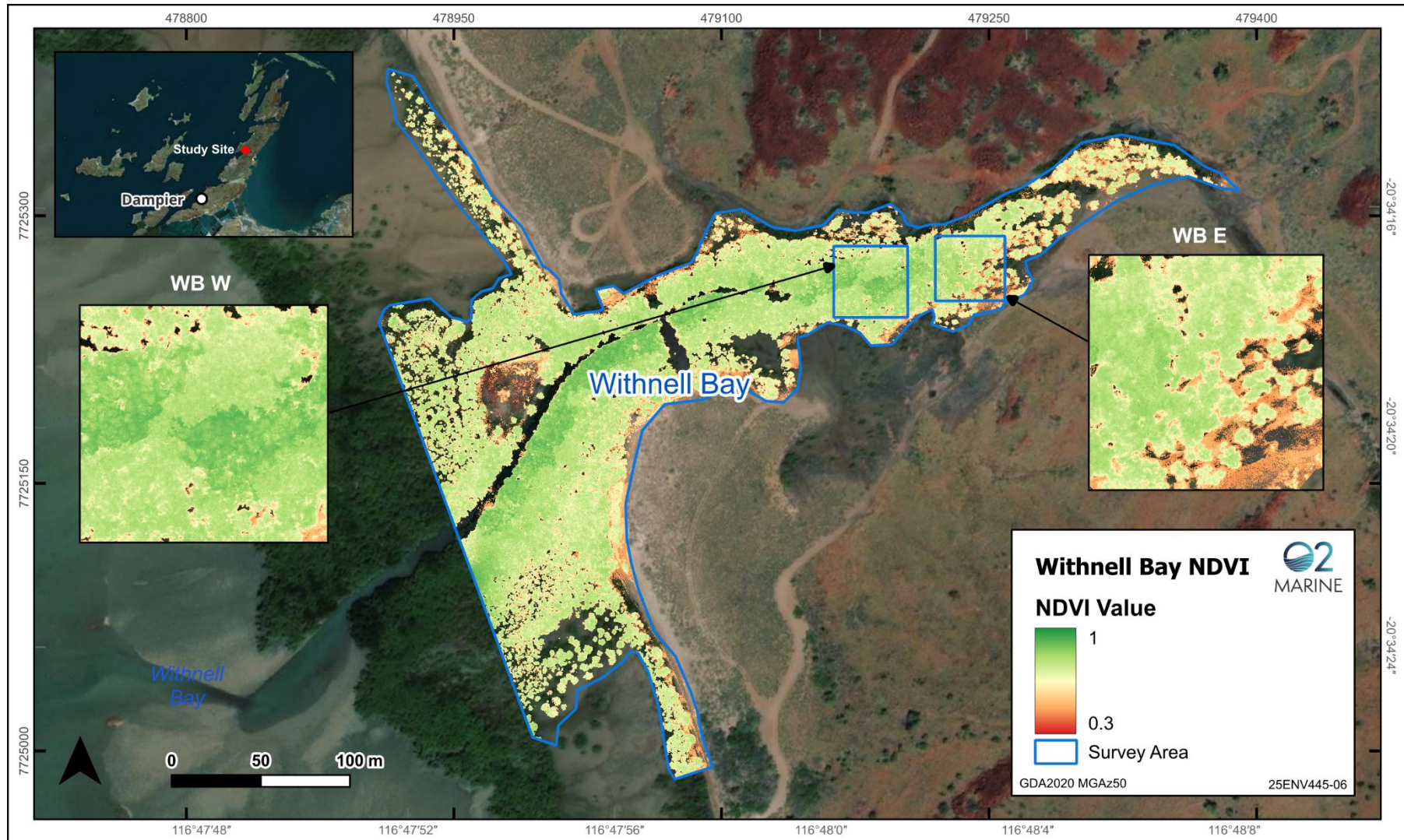


Figure 24: Withnell Bay NDVI output imagery

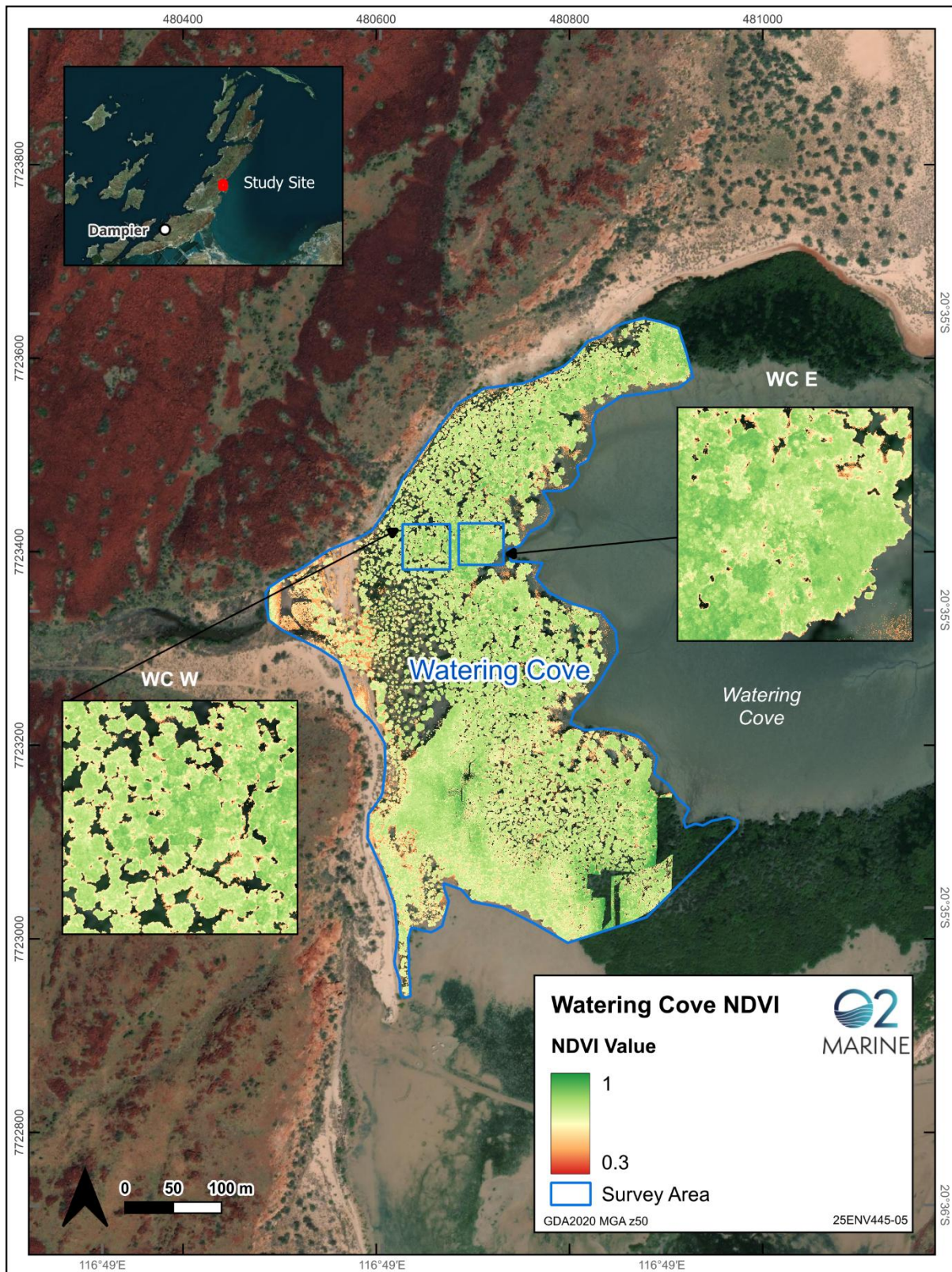


Figure 25: Watering Cove NDVI output imagery

4. Discussion

Consistent with previous surveys, contaminant concentrations were measured within sediment, oysters and mud whelks, and compared to the data collected previously as part of the ChEMMS program. Mangrove health and NDVI data was also acquired and compared to data previously collected from the ChEMMS program.

4.1. Subtidal Marine Sediments

All metals and COPCs remained below their respective ANZG (2018) DGVs throughout 2025, with the exception of a single exceedance of the copper DGV recorded at site DO2. However, limited legacy copper data are available for this site; aside from a single result from 2019 that was below the DGV, the dataset is insufficient to support a robust historical comparison.

With respect to historical nickel trends, site SB3 has been the only location to record exceedances since 2012, with exceedances occurring in 2017, 2018, 2021 and 2022. The high variability observed in nickel and zinc concentrations is considered to be attributable to naturally elevated background levels, which are known to occur heterogeneously across sediments in the Pilbara region (DEC 2006).

For most metal analytes, concentrations at KBSB and WDO were slightly higher than those recorded at the KGP and CZ^R sites, consistent with patterns observed in previous years. Concentrations of TPH and PAHs in 2025 were again low and remained below their respective DGVs, consistent with findings from previous surveys. Accordingly, sediment contamination at subtidal locations resulting in an environmental risk is not considered plausible for 2025.

4.2. Intertidal sediments

Within intertidal sediments, metal concentrations were generally below the DGVs. Exceedances of DGVs were recorded for chromium at sites WB^R and NEC, nickel at WB^R, WC^R and NEC, and zinc at site NNBDU. Nickel concentrations have historically been elevated at most sites over the duration of the ChEMMS program, with a noticeable increase observed since 2014. The underlying causes of this increase are not readily apparent from the available data, and further investigation would be required to better understand the mechanisms driving these elevated concentrations. Potential investigative approaches could include targeted sampling at additional locations where elevated nickel concentrations have been observed. While the use of nickel alloys in LNG storage and gas processing infrastructure may contribute to elevated nickel levels in intertidal sediments, exceedances have been recorded at both impact and reference sites. This suggests that the elevated nickel concentrations are likely to be predominantly driven by natural background conditions (Kern, Schriever & Stumpfe, 2007; DEC 2006). Given the variability observed across both reference and impact sites, no immediate management action is considered necessary.

Site NNBDU within KGP recorded its third consecutive zinc exceedance; however, concentrations remained below the GV-High value and are therefore considered to be of low concern. Furthermore, the adjacent downstream sites in the receiving environment, NNB and NNBD, did not record any exceedances.

TPH concentrations in intertidal sediments in 2025 were variable compared with previous surveys. All TPH concentrations were below the DGV value.

Concentrations of MDEA in intertidal sediments during 2025 were below the laboratory LoR (<10 mg/kg) at all locations, consistent with results reported over the past nine years.

4.3. North East Creek Sediments

Metal concentrations in North East Creek sediments in 2025 exhibited variability that was generally comparable with historical data. Since 2022, NEC1 (both A and B) has consistently reported relatively higher metal concentrations than other NEC sites. Overall, sediment results were consistent with historical trends and exceedance patterns for each metal and site. The primary exception was cadmium at NEC1-B, which exceeded guideline values for the first time.

At NEC1-B, cadmium (2.0 mg/kg; DGV = 1.5 mg/kg), zinc (296 mg/kg; DGV = 200 mg/kg) and mercury (0.22 mg/kg; DGV = 0.15 mg/kg) exceeded their respective default guideline values. Historical data indicate that cadmium at NEC1-B had not previously exceeded the DGV, while zinc exceeded the DGV once in 2018 and mercury exceeded the DGV twice in 2018 and 2022.

A single exceedance of the mercury DGV was also recorded at NEC5-A in 2025 (0.27 mg/kg). Historically, mercury has exceeded the DGV at this site on three occasions, in 2018, 2019 and 2021. No GV-High exceedances were recorded in any North East Creek sediment samples during 2025.

Nearby reference sites (WB^R and CZ^R) to North East Creek have not consistently exhibited heavy metal exceedances (apart from naturally elevated chromium & nickel) since North East Creek sediment testing started (in 2017). Hence, there is no indication that contamination has dispersed beyond the North East Creek area. Continued monitoring to build a more robust dataset with an increased sample size will therefore be required to determine the potential source of metal contamination to North East Creek sediments and surrounding areas. As discussed previously for intertidal sites (Section 4.2), the use of nickel alloys associated with LNG storage and gas processing infrastructure may contribute to elevated nickel concentrations in sediments adjacent to KGP; however, as exceedances have also been recorded at reference sites, these elevated values are considered likely to be predominantly driven by natural background conditions (Kern, Schriever & Stumpfe, 2007; DEC, 2006).

Although mercury exceedances were recorded at NEC1-B and NEC5-A in 2025, total mercury concentrations have declined. This is likely attributable to investigations and subsequent remediation of potential mercury sources from KGP, with current mercury concentrations likely indicative of historic contamination rather than current sources. Notwithstanding these exceedances, no sites exceeded the GV-High value for mercury, indicating that North East Creek is unlikely to represent a significant source of mercury contamination to the surrounding environment or nearby reference sites.

BTEXN concentrations in North East Creek intertidal sediments during 2025 were below the laboratory LoR at all sites. This pattern has been consistent since monitoring commenced in 2017, indicating that BTEXN does not currently present an environmental risk. No TPH exceedances were recorded in North East Creek sediments during the 2025 monitoring program. Furthermore, total TPH concentrations in 2025 exhibited a substantially lower range compared with data from 2017 to 2020, with no exceedances of the DGV. Reductions in TPH concentrations observed in 2019, 2021 and 2022 are primarily attributed

to changes in analytical practices, specifically the normalisation of results to 1% TOC in accordance with ANZG (2018) guidance. While TPH concentrations recorded in 2025 were generally lower than those observed historically, concentrations continued to fluctuate between monitoring years and among sites, with no consistent declining trend evident across North East Creek. Ongoing monitoring is therefore recommended to determine whether a sustained decline in TPH concentrations emerges over time.

4.4. Oysters

In 2025, lead concentrations in oyster tissue were well below the FSANZ maximum level of 2 mg/kg. There is no FSANZ guideline level for chromium and nickel against which results can be assessed, however the results were consistent with historical trends that show low variability between sites and across years.

Copper concentrations have exceeded the FSANZ GEL 90th percentile during most monitoring years at sites on the western side of the Burrup Peninsula. In 2025, copper exceeded the GEL at all impact sites and at two reference sites (CH6^R and CH7^R). In contrast, sites located away from industrial areas (NB^R, HC^R and CC^R) reported copper concentrations below the GEL. Historical data indicate that some degree of bioaccumulation is occurring at impact sites, as reference sites rarely exhibit exceedances or, if exceedance are recorded, they are only marginally above the GEL (e.g. CH6^R, CH7^R and WC^R). Since monitoring commenced, copper concentrations have shown greater variability at KBSB sites compared with KGP and CZ^R sites.

A single exceedance of the FSANZ maximum level for cadmium (2 mg/kg) was recorded in oyster tissue at site WC^R (2.5 mg/kg). This represents the first occasion on which cadmium concentrations at this site have exceeded the maximum level.

Consistent with 2024, the FSANZ GEL for zinc (290 mg/kg) was exceeded at all impact sites in 2025. In contrast, all reference sites on the northern and eastern sides of the Burrup Peninsula (NB^R, WC^R, HC^R, CC^R and CH7^R), with the exception of CH6^R, reported zinc concentrations below the GEL.

Historical monitoring data indicate that zinc concentrations at the impact sites have consistently exceeded the FSANZ GEL since monitoring program commenced. Although zinc concentrations have fluctuated between monitoring years, the 2025 results remain within the historical range and do not indicate a sustained increasing or decreasing trend.

Hydrocarbon concentrations (TPH C6–9, TPH C10–14 and TPH C29–36) at all sites during the 2025 monitoring campaign were below their respective LoRs, consistent with trends observed in previous years. In contrast to prior surveys, TPH C15–28 was detected at sites CH1, CH5, CH6^R, CH7^R, CH7a^R and S5 in 2025, with concentrations ranging from 100 mg/kg at CH7a^R to 730 mg/kg at CH1. Individual PAHs concentrations were below the LoR at all sites, consistent with results reported since monitoring commenced in 1989.

Although lipid content has varied widely over time at individual sites, no correlation between lipid content and metal concentrations was observed in 2025. In contrast, strong positive correlations were identified between shell length and copper ($R^2 = 0.725$) and between shell length and zinc ($R^2 = 0.798$). These relationships are consistent with published studies reporting that copper and zinc are commonly

enriched in oyster tissues through physiological processes (Huanxin, Lejun & Presley, 2000), and that larger oysters generally contain higher concentrations of these metals (Woke, Umesi & Oguzor, 2016). However, the observed correlations may also reflect spatial differences in oyster size between monitoring locations. Oysters at the eastern reference, where public access is greater, were generally smaller than those at the western sites located closer to the industrial facilities. This difference may reflect greater recreational harvesting pressure at the more accessible eastern sites, resulting in the preferential removal of larger oysters.

The mean oyster shell length recorded in 2025 was 61.5 mm. Consistent with previous years, average shell lengths were shortest at sites on the eastern side of the Burrup Peninsula (HC^R, CC^R, WC^R and NB^R), potentially reflecting greater public access and harvesting pressure at these locations. It should also be noted that most oyster sites on the eastern side of the Burrup Peninsula contain primarily *S. cuccullata*, as opposed to the western side being predominantly the much larger *S. echinata*, which may also account for the shell size discrepancy. Lipid content across all sites in 2025 was comparable to 2024 results and fell within the range observed historically, noting that lipid concentrations are known to vary seasonally in response to environmental conditions and reproductive cycles (Chu, Webb & Chen, 1990).

4.5. Mud Whelks

In 2025, a single exceedance of copper was recorded in mud whelk tissue at site WB^R. This exceedance is considered isolated, with no evidence to indicate broader biota contamination. Concentrations of cadmium, lead, mercury and zinc in mud whelk tissue were below their respective FSANZ maximum levels or GELs in 2025. There are no FSANZ maximum levels or GELs established for chromium and nickel; however, concentrations of both metals have shown a decreasing trend since 2018–2019 across most sites, including both impact and reference locations. Results for chromium and nickel in 2025 were comparable with historical surveys and were generally lower than concentrations recorded between 2018 and 2020.

Total and individual TRH concentrations at all sites were below the laboratory LoRs, consistent with historical monitoring results. In 2025, mud whelk shell lengths were comparable to historical measurements and ranged from 84 to 115 mm, with a mean shell length of 104.8 mm. Both mud whelk species (*T. telescopium* and *T. palustris*) were readily observed at all sites, with no discernible species-related differences in shell length, and no indication of site-related impacts on growth.

4.6. Mangrove Health

Overall, mangrove condition in 2025 remained consistent with recent monitoring years, with no indicators suggesting a decline in mangrove health across the ChEMMS monitoring program. Canopy cover in 2025 was broadly stable relative to recent (preceding five-year) data, with most sites exhibiting stable to increasing canopy cover. As has been observed historically, year-to-year variability in canopy cover is evident at some sites, however, this variability is considered to reflect natural temporal and spatial variation rather than impacts associated with nearby industrial or development activities.

Species composition in 2025 was comparable with previous years, with most plots dominated by a single mangrove taxon and exhibiting low within-plot variability. Minor mixed species composition was

recorded at a limited number of plots, where secondary taxa contributed up to 20% cover. More pronounced mixing of species was recorded at NNB R3, where *A. marina* comprised approximately 40% of total cover. These observations are consistent with patterns recorded in recent monitoring years and does not indicate a broader shift in assemblage structure across the monitoring area.

Phenological activity in 2025 was recorded at multiple sites, with budding and flowering most frequently observed within *R. stylosa* plots. Phenological activity within *A. marina* plots was less common but was recorded at NEC, CZ and WB. The presence of phenological activity across both taxa indicates ongoing reproductive function and physiological viability of the mangrove communities.

Seedling occurrence was limited across all sites in 2025, with seedlings observed only within two *A. marina* plots. While seedling abundance was low, this is consistent with previous monitoring years and does not necessarily indicate reduced recruitment success or declining ecosystem health. Mangrove recruitment is often episodic and influenced by local hydrodynamic conditions, sediment stability and propagule retention, and low seedling presence in a given year is not uncommon in established mangrove stands.

Indicators of leaf condition and canopy health further support the interpretation of generally healthy mangrove ecosystems in 2025. Most plots exhibited low levels of leaf yellowing, insect damage and dust coverage. Moderate leaf yellowing (25–50%) was recorded at a small number of plots, primarily at NNB and KB, but these observations were spatially limited and not consistently associated with other indicators of stress. Insect damage and dust coverage were generally low across all sites, with only isolated plots exhibiting slightly elevated values.

Storm-related physical damage, including broken branches, was observed at a limited number of plots across several sites. Such damage is characteristic of episodic disturbance in coastal mangrove environments and, in the absence of associated declines in canopy cover or widespread physiological stress, is not considered indicative of reduced mangrove health.

Consistent with previous years, no clear differences were observed between sites located on the western and eastern sides of the Burrup Peninsula, as well as no sustained declines in any mangrove health indicators being identified during 2025. Overall, mangrove health data collected during the 2025 monitoring program were comparable with historical data and recent survey years, and no monitored parameters indicated impacts attributable to activities associated with the Woodside's operations at the various facilities.

4.7. NDVI Analysis

NDVI data for 2025 were the highest recorded since the NDVI program began in 2016. Consistent with recent monitoring years, KB^R recorded the highest mean NDVI values across the monitoring network, while NEC recorded the lowest mean NDVI values. Despite this, mean NDVI values at NEC increased in 2025 relative to recent years, following a gradual decline observed since 2022, suggesting short-term variability rather than a sustained downward trend (Figure 26).

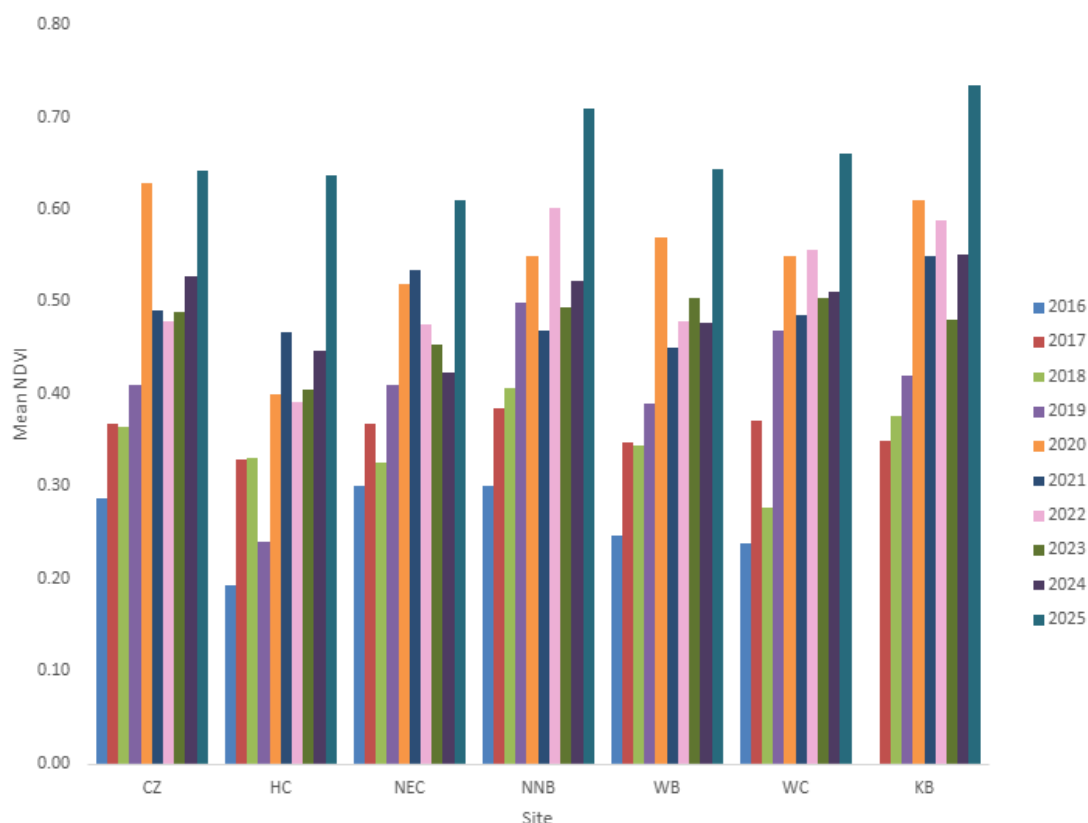


Figure 26: Historical NDVI data from 2016 to 2025 (Overall site areas)

The 2025 survey represents the tenth consecutive year of NDVI data collection, enabling comparison against a robust nine-year MVI baseline (noting that 2025 data are excluded from MVI derivation). Mean NDVI values at all sites, including NEC, remained well above their respective MVI and ML (MVI minus 20%) thresholds.

As observed in previous years, spatial variability in NDVI values is considered to reflect inherent site-specific factors such as ground cover heterogeneity, canopy structure and species composition, particularly at NEC where non-mangrove substrates comprise a greater proportion of the survey area. Importantly, conventional ground-truthed mangrove health monitoring conducted in 2025 did not identify any indicators of declining mangrove condition at NEC or other sites.

High wind conditions experienced during the 2025 ChEMMS survey presented limitations for NDVI image acquisition at several sites. Wind speeds exceeded approximately 20 knots for the duration of the survey period, resulting in persistent aircraft instability and image blur that adversely affected photogrammetric reconstruction during postprocessing. As a result, although multispectral data were successfully captured at Conzinc Bay, North East Creek and Waterring Cove, certain portions of the imagery could not be reliably processed for NDVI analysis due to unacceptable levels of distortion and misalignment. Importantly, no alternative survey window with reduced wind conditions was available during the sampling period, and repeated acquisition attempts were therefore not practicable.

The 2025 survey was also conducted approximately three weeks later than the typical ChEMMS monitoring window. This timing coincides with a period that is generally characterised by increased and more persistent westerly winds in the region. The combination of delayed survey timing and sustained high wind speeds is considered the primary factor contributing to the reduced usability of NDVI outputs at these locations. While this resulted in partial spatial gaps in NDVI coverage for 2025, the issue is operational in nature and does not reflect changes in mangrove extent or condition. Ground-based mangrove health assessments and long-term NDVI trends at these sites provide sufficient context to support interpretation of overall mangrove health for the reporting period. While the area of usable NDVI data may vary slightly between years due to data cleaning and clipping, the overall mangrove extent surveyed at each location remains consistent.

Overall, NDVI data collected in 2025 showed values well above established site-specific MVI and ML thresholds across all sites and survey areas. These results support conclusions drawn from field-based monitoring and indicate that mangrove canopy condition across the ChEMMS monitoring network remains generally healthy and within the range of natural variability.

5. Recommendations

The following recommendations are based on the findings of this year's annual study, as well as looking more broadly to address key changes over time across the life of the ChEMMS program. These proposed actions are intended to guide future monitoring efforts, embrace new technologies and improve outcomes for both Woodside and the environment.

1. Transition mangrove health monitoring toward a predominantly RPAS-based approach, supported by periodic in situ validation

Given the robustness of the long-term dataset and recent advances in remote sensing, it is appropriate to progressively reduce the frequency of in situ mangrove health surveys from annual to three-yearly intervals now that a reliable ten-year MVI and MLs can be established, with the 2025 scheduled to be included in the 2026 MVI assessment. It is proposed that mangrove site maintenance (restaking, retagging, reflagging etc.) and in situ mangrove health surveys would be undertaken in the next iteration of the ChEMMS program (2026) and subsequently at three-yearly intervals after that. RPAS would be undertaken annually to ensure MLs are adhered to and the continual evolution of the MVI is captured.

2. Continue and formalise species-specific NDVI analysis as an investigative tool

The pilot Random Forest classification demonstrated strong performance in differentiating *A. marina* and *R. stylosa* assemblages and revealed meaningful differences in NDVI responses between species. It is recommended that species-specific NDVI analysis be expanded as an investigative or supplementary assessment tool, particularly at sites exhibiting elevated variability or long-term trends. While species-specific NDVI values should not replace the established MVI framework at this stage, their continued application will improve ecological interpretation and assist in distinguishing true health changes from shifts in species composition.

3. Adoption of a 10-Year Rolling Minimum Vegetation Index

The application of a rolling MVI provides a scientifically robust framework for long-term mangrove health assessment by ensuring that the baseline reference condition remains representative of prevailing recent environmental conditions, while still retaining sensitivity to short-term or acute deviations in vegetation health. Mangrove systems are inherently dynamic and respond to gradual influences such as climatic variability, sea-level change, sediment accretion, and natural stand development or senescence. A static or slowly adapting baseline does not adequately capture these trends and may obscure meaningful change by comparing current conditions against an increasingly outdated reference state.

By progressively incorporating new, validated annual NDVI data and removing the oldest year from the baseline, ensures the reference condition evolves incrementally in response to natural change. This approach reduces the risk of falsely identifying chronic, gradual changes as anomalous impacts, while maintaining the ability to detect sudden or unexpected declines that may indicate environmental stress or disturbance. The rolling baseline approach ensures that ML thresholds remain ecologically relevant, defensible, and aligned with best-practice environmental monitoring principles. Accordingly, it is recommended that once ten

consecutive years of consistent and comparable NDVI data have been obtained, the ChEMMS program transition to a rolling 10-year MVI framework.

It should be noted that any annual NDVI dataset that exceeds the ML threshold should be carefully interrogated prior to inclusion in rolling MVI calculations. This review should assess whether the observed reduction in NDVI reflects a temporary or impact-related disturbance (e.g. anthropogenic impact, acute environmental stress, or anomalous conditions), or whether it represents a legitimate shift in baseline vegetation condition driven by natural variability or longer-term ecological change.

Only NDVI datasets that are determined to represent valid baseline conditions should be incorporated into the evolving MVI.

4. Operational Constraints

It is recommended that a practical operational wind-speed threshold be formally adopted for RPAS multispectral image acquisition. Where sustained wind speeds exceed this threshold, NDVI data collection should be deferred (if possible) or acknowledged as potentially limited in spatial coverage. This approach will provide transparency in data interpretation, improve consistency in data quality across monitoring years, and reduce the likelihood of unusable imagery requiring exclusion during post-processing.

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Appendix A. Subtidal sediments data and graphs

APPENDIX A-SUBTIDAL SEDIMENTS

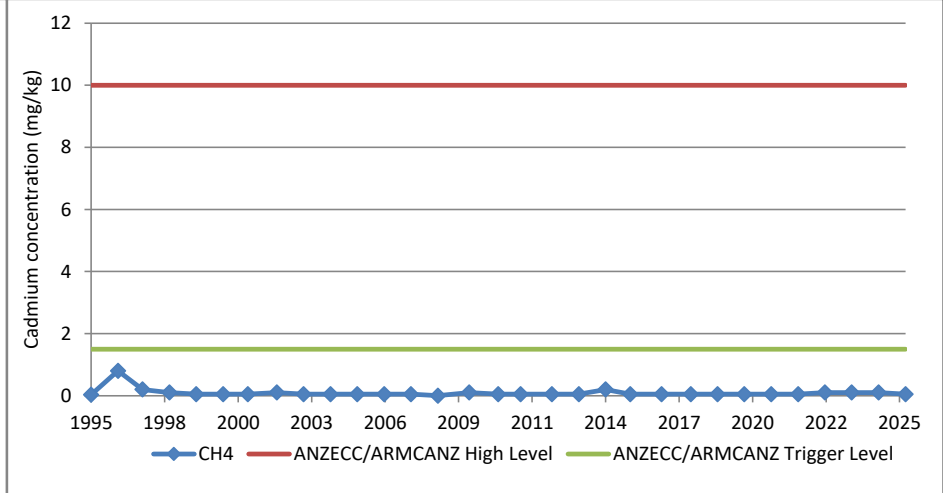
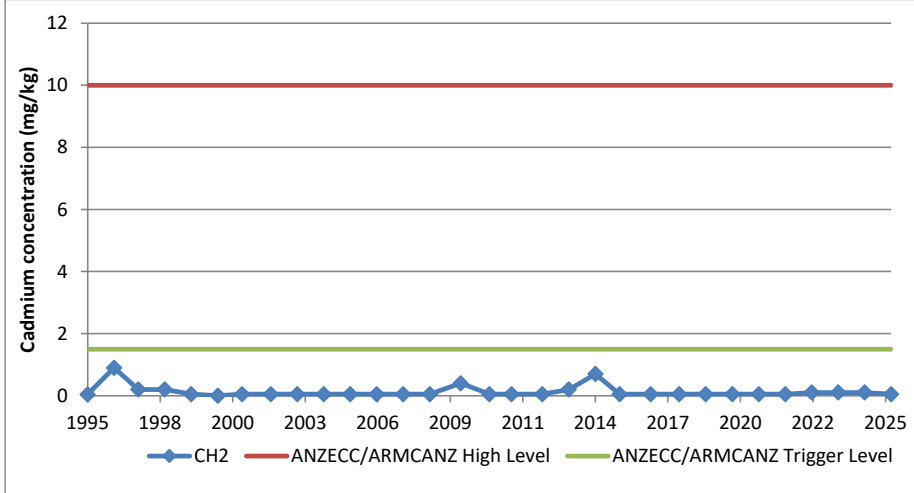
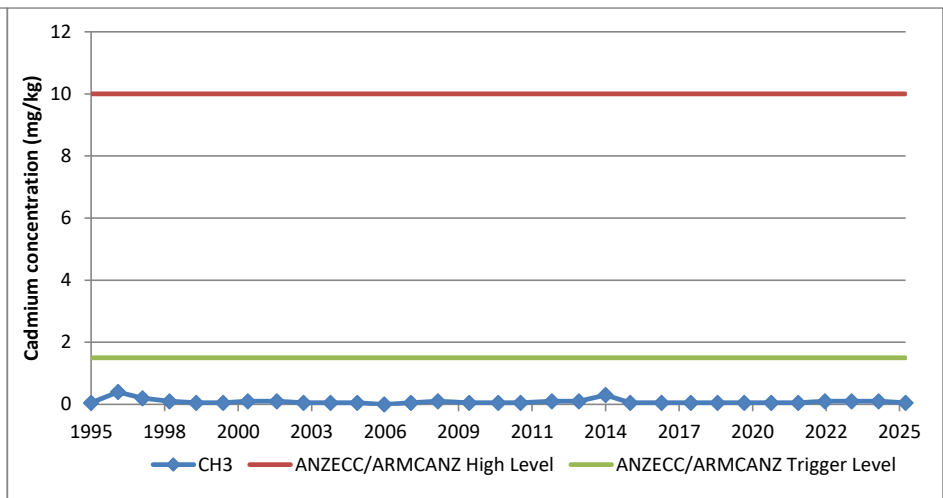
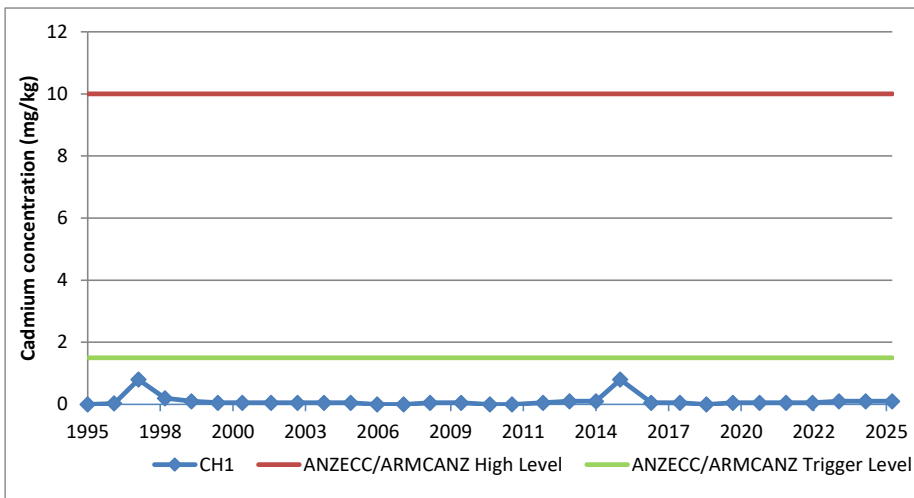
Cadmium

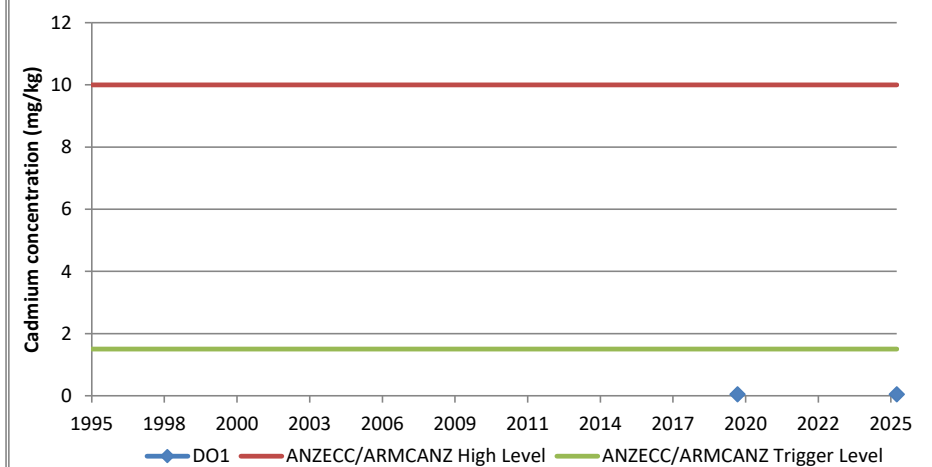
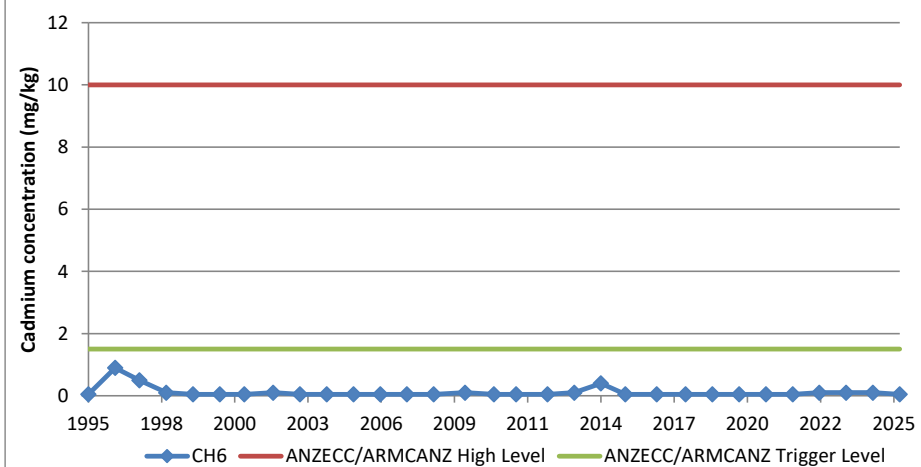
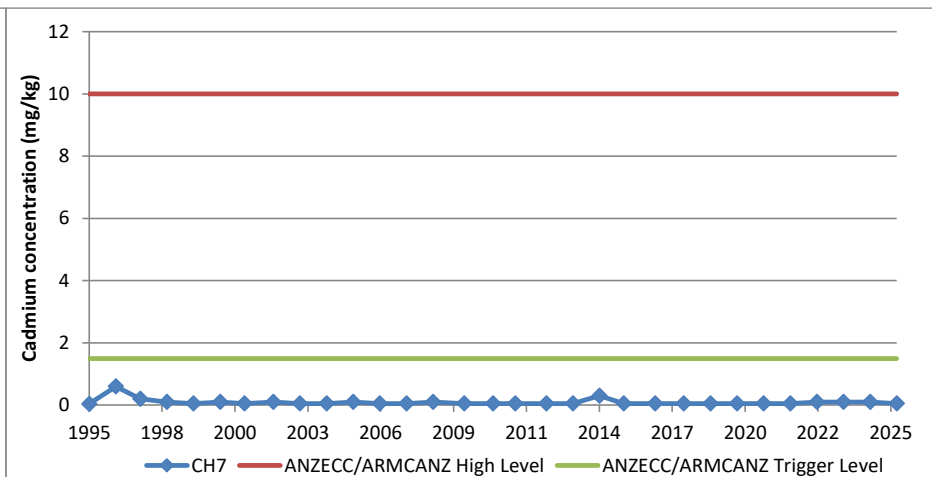
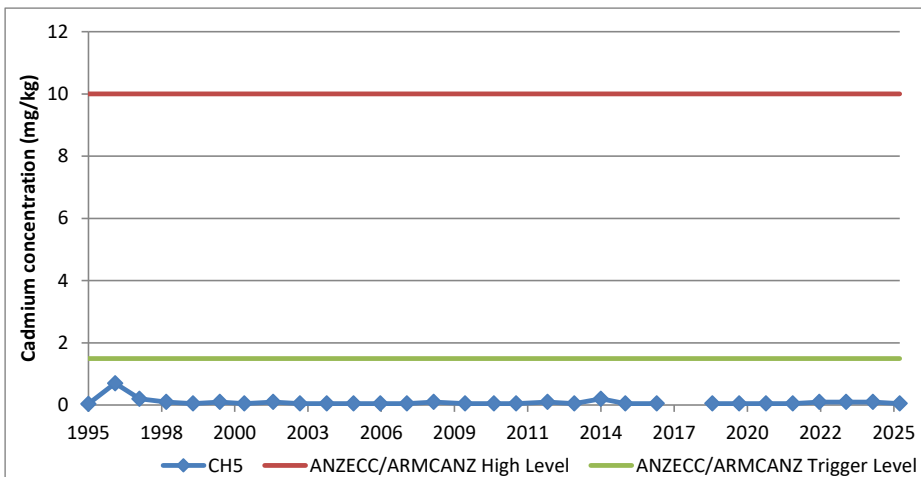
Cadmium (mg/kg dry weight)																																	
With Duplicates	SITE	Jun-95	Jun-96	May-97	May-98	May-99	May-00	Apr-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	Jul-09	Aug-10	Jun-11	Aug-12	Aug-13	Aug-14	Jul-15	Sept-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25	
	CH1	0.03	0.8	0.2	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05/0.05b	0.05/0.05b	0.05	0.05	0.3/0.3b	0.05/0.05b	0.05	0.1	0.1	0.1	0.8	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	CH1a	NA	NA	NA	NA	NA	NA	0.05	NA	0.05	NA	0.05	0.05	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CH2	0.04	0.9	0.2	0.2	0.05	0.05/0.05a	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.4	0.05	0.05	0.05	0.2	0.7	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	CH2a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	0.05	0.2	0.2	0.8	0.05	0.05	0.05	0.05	0.05	0.05	NA	NA	NA	0.05	
	CH3	0.05	0.4	0.2	0.1/0.1a	0.05	0.05	0.1	0.1	0.05	0.05	0.05	0.05/0.05b	0.05	0.1	0.05	0.05	0.05	0.1	0.1	0.3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	CH4	0.03	0.8	0.2	0.1/0.1a	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.1/0.1b	0.1	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05	
	CH5	0.04	0.7	0.2	0.1	0.05	0.1	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.1	0.05	0.2	0.05	0.05	Refusal	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	CH5a	NA	NA	NA	NA	NA	NA	0.05	0.05/0.05b	0.05	0.05	0.05/0.05b	0.05	NA	NA	NA	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CH6	0.05	0.9	0.5	0.1/0.2b	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.1	0.4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	CH7	0.04	0.6	0.2	0.1	0.05	0.1	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SB1	0.05	0.4	0.2	0.05	0.05	0.05/0.05b	0.05/0.05b	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.6	0.05	0.05	0.1	0.3	1.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	SB1a	NA	NA	NA	NA	NA	NA	NA	NA	0.05	0.05	NA	0.05	0.05	0.1	0.7	0.05	0.05	NA	0.2	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	SB2	0.05	0.4	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.6	0.05	0.05	NA	NA	NA	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	SB3	0.05	0.6	0.2	0.1	0.05	0.05	0.05	0.05/0.05a	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.8	0.05	0.05	NA	NA	NA	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	SB4	0.05	0.3	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.3	0.05	0.05	NA	NA	NA	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	SB5	0.05	0.2	0.2	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.4	0.05	0.05	NA	NA	NA	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
	SB12	0.05	0.3	0.2	0.1	0.05	0.1	0.05	0.1	0.05/0.05b	0.05	0.1	0.05	0.05	0.1	0.9	0.05	0.05	0.05	0.2	0.2	0.8	0.17	0.05	Refusal	Refusal	Refusal	NA	NA	NA	NA	NA	0.05
	SB12a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05/0.05b	NA	NA	NA	NA	0.2	NA	NA	NA	NA	Refusal	Refusal	Refusal	NA	NA	NA	NA	NA	NA	NA
	DO1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	NA	0.05
	DO2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05
	DO3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Refusal	NA	NA	NA	Refusal	NA	NA	0.05
	DO4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05
	DO4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05
	DO5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05
	DO6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05
	DO7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05
	DO7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA	NA	NA	NA	0.05

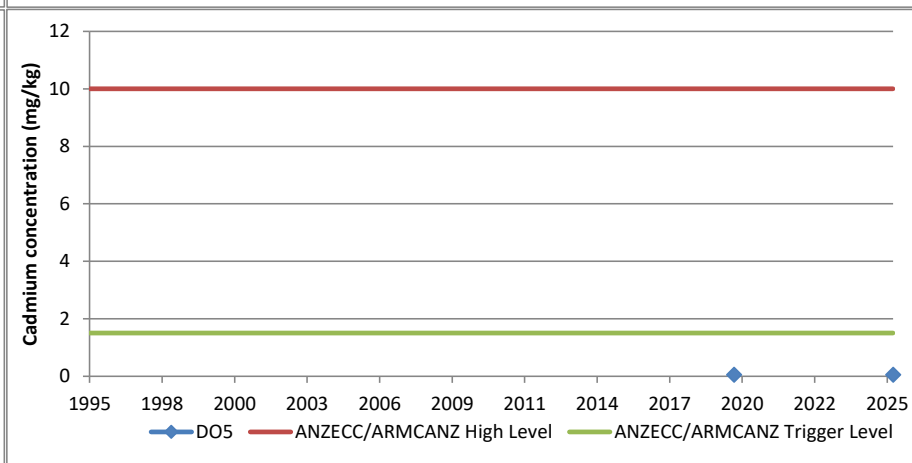
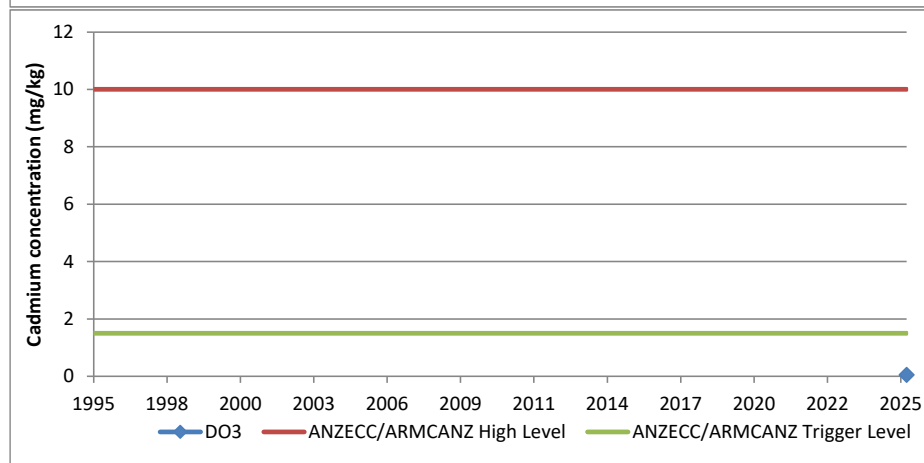
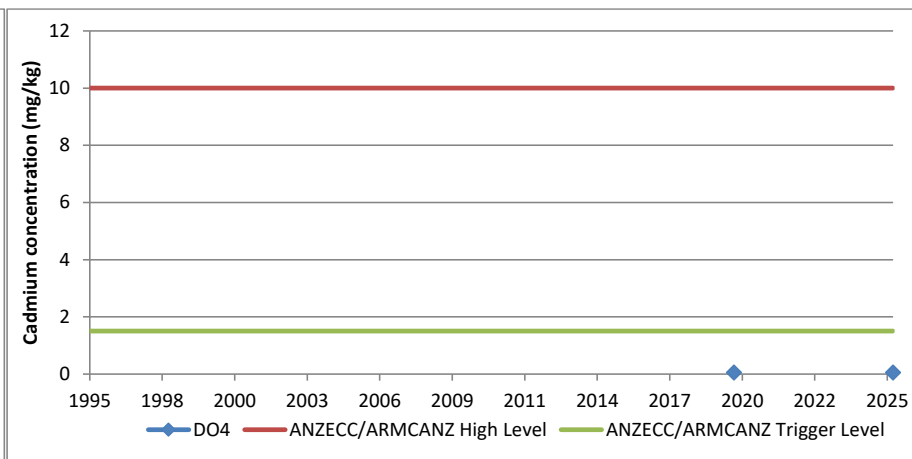
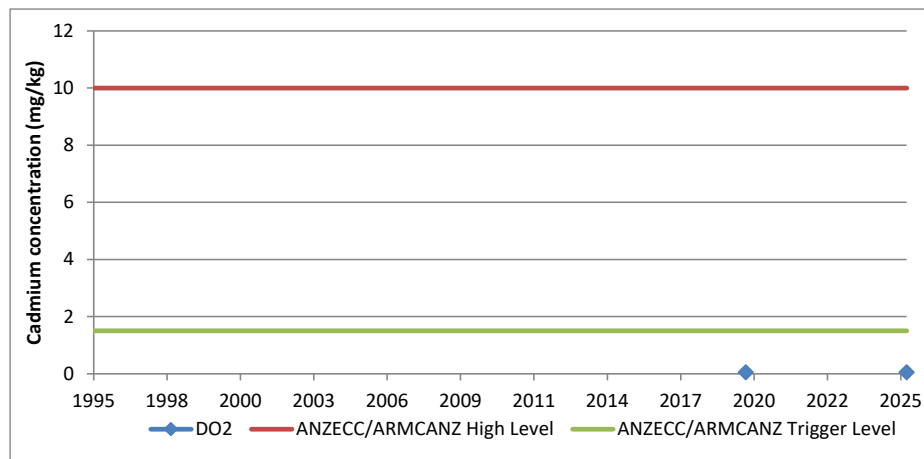
Note where <LOR half LOR is reported

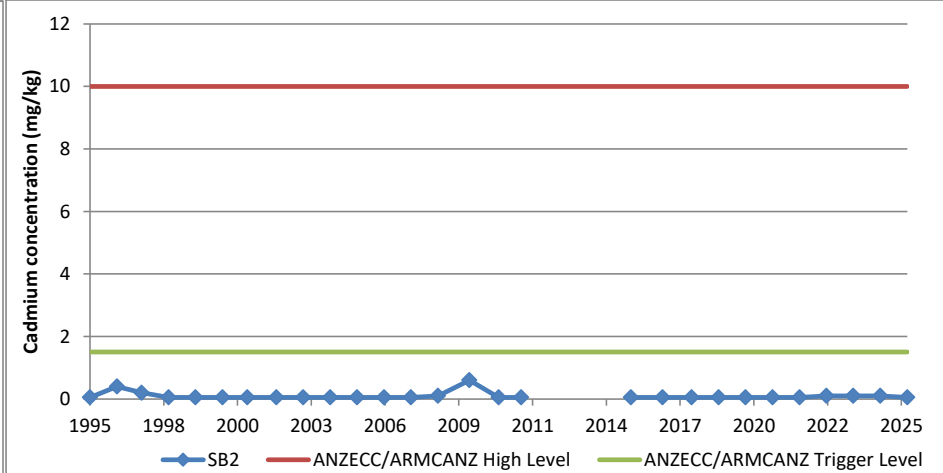
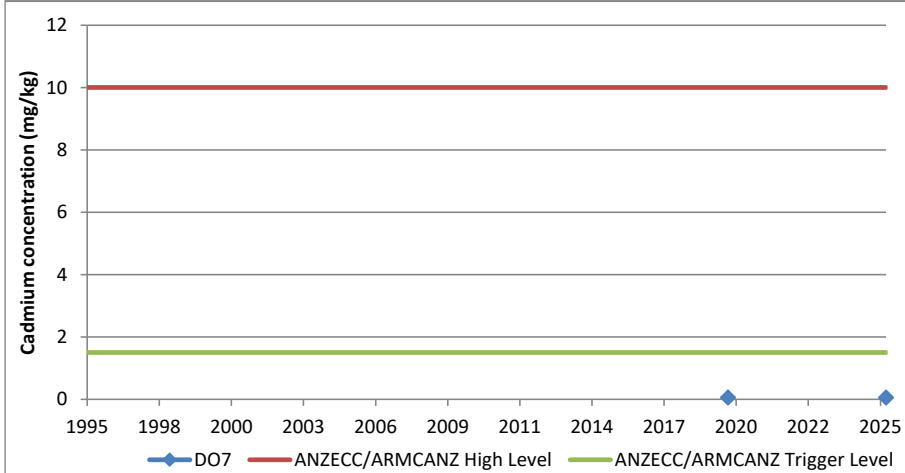
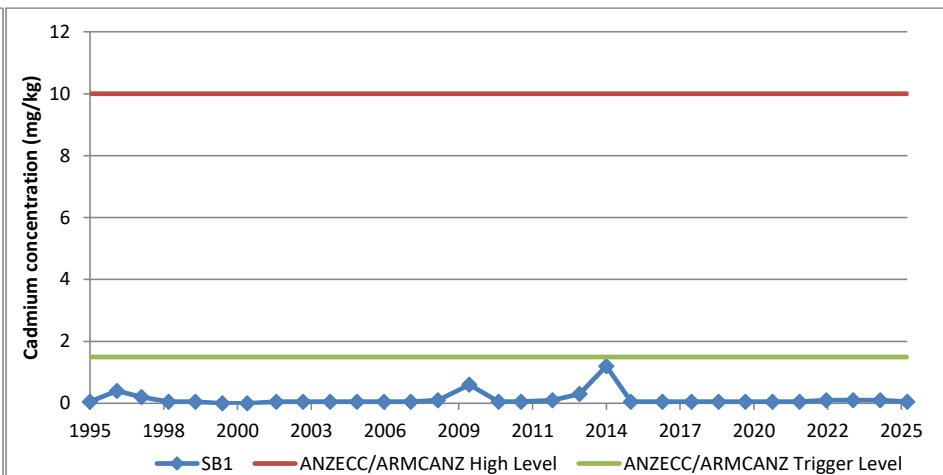
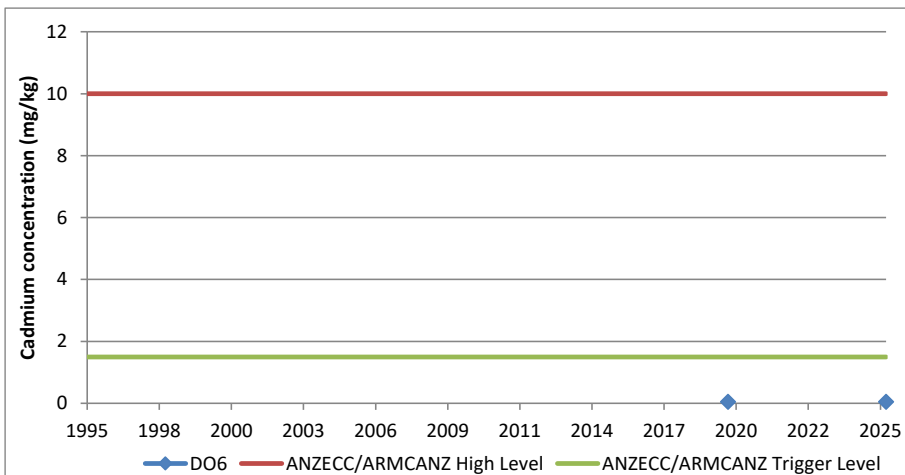
Exceedance of Guidelines

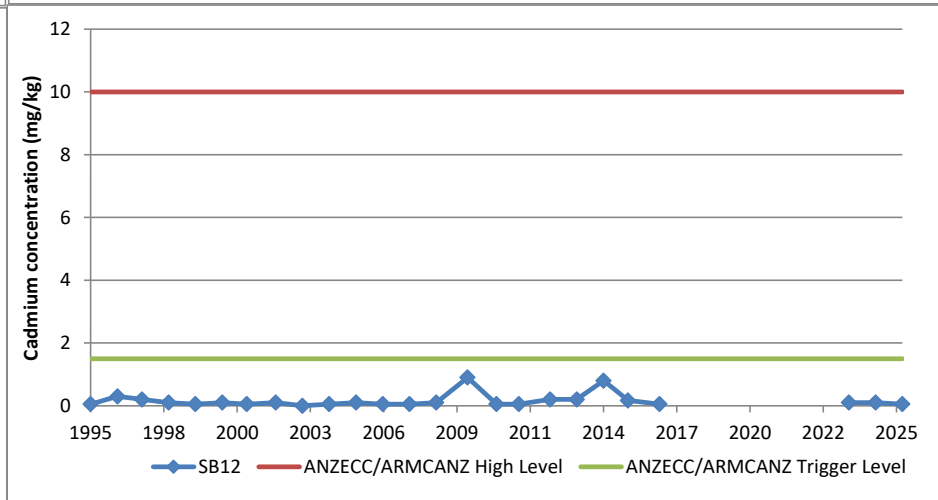
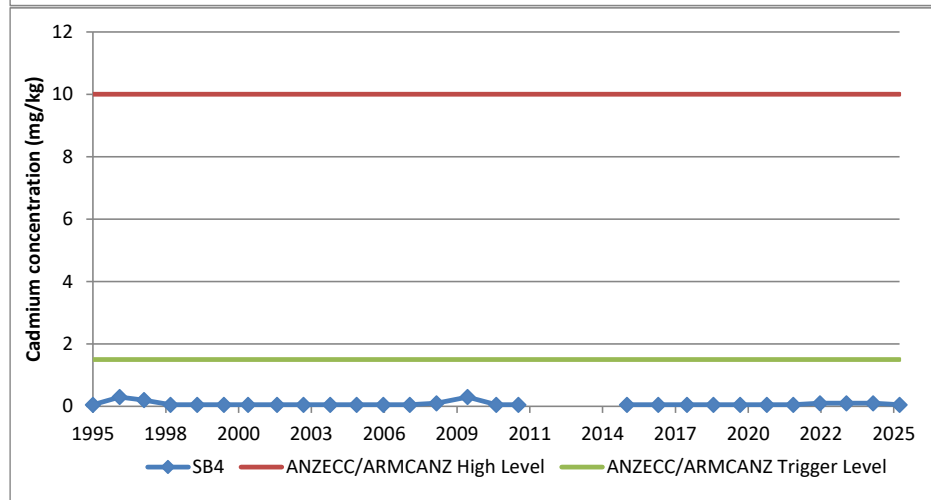
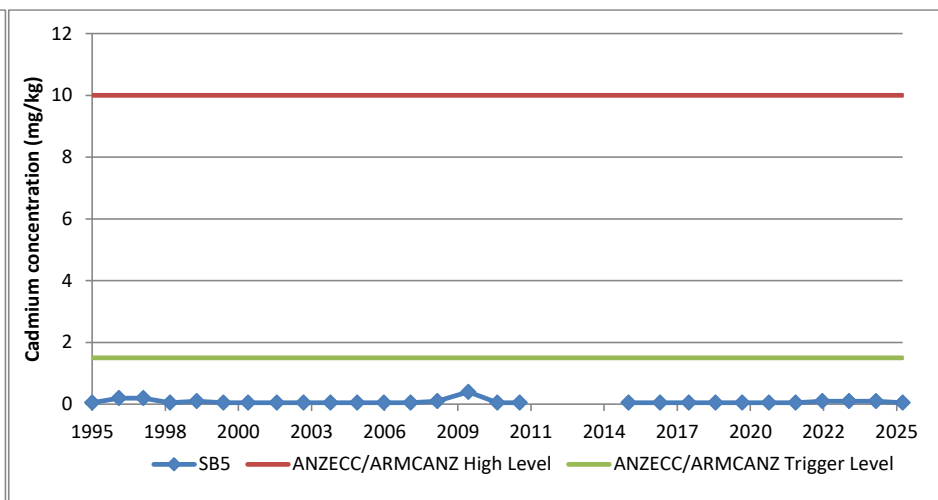
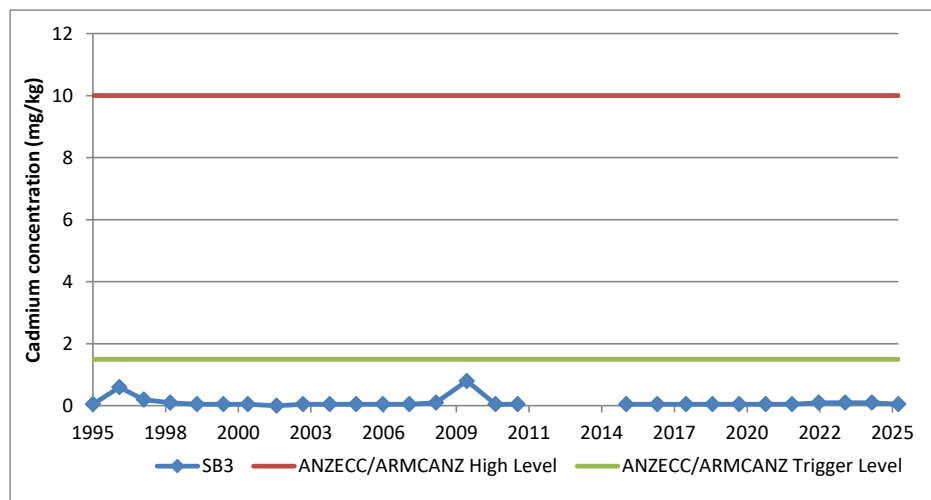
ANZECC/ARMCANZ Trigger Level	1.5
ANZECC/ARMCANZ High Level	10











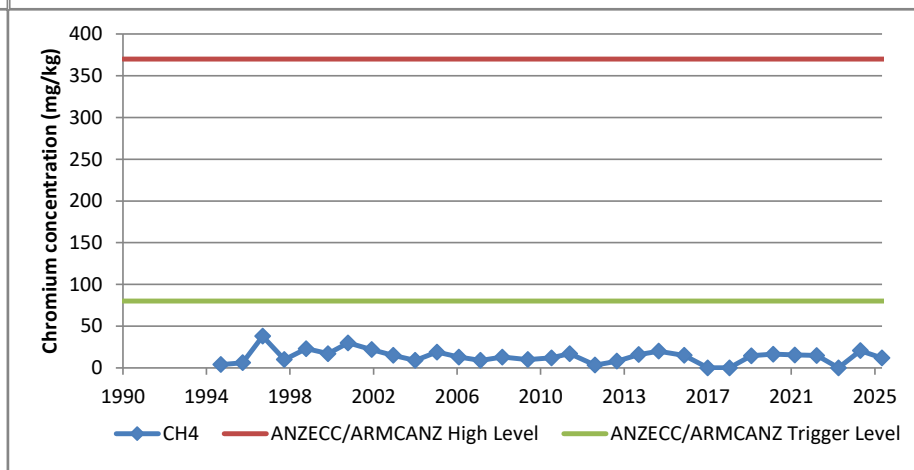
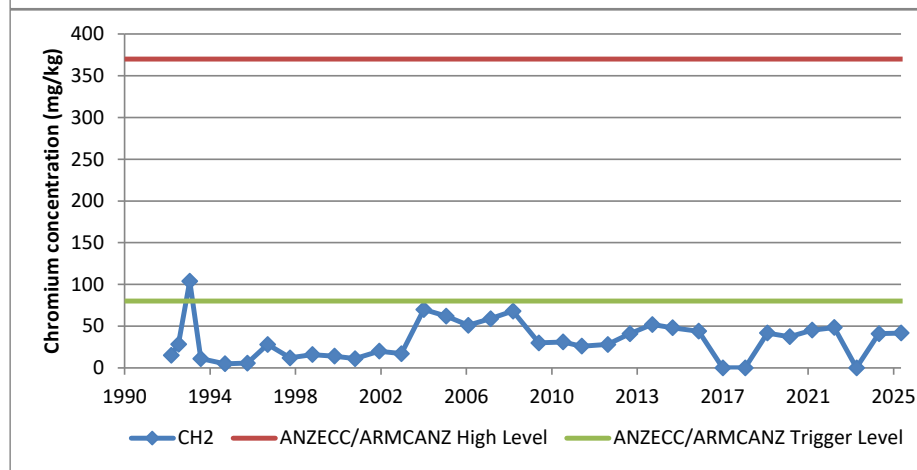
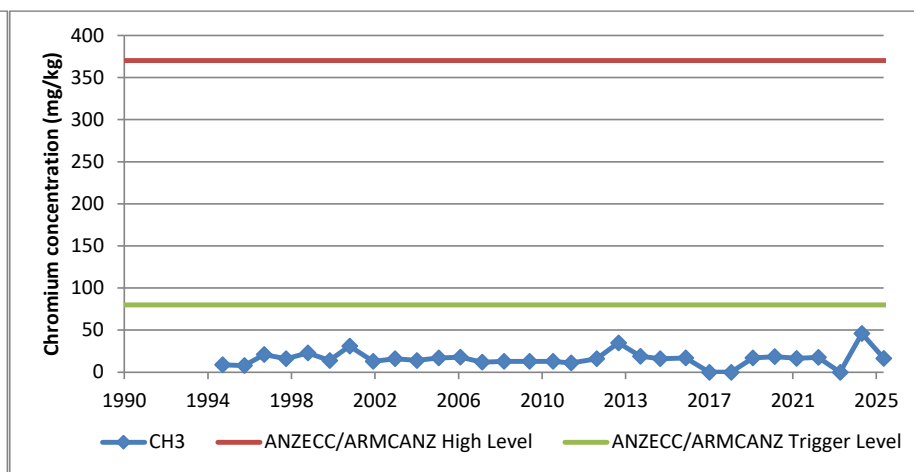
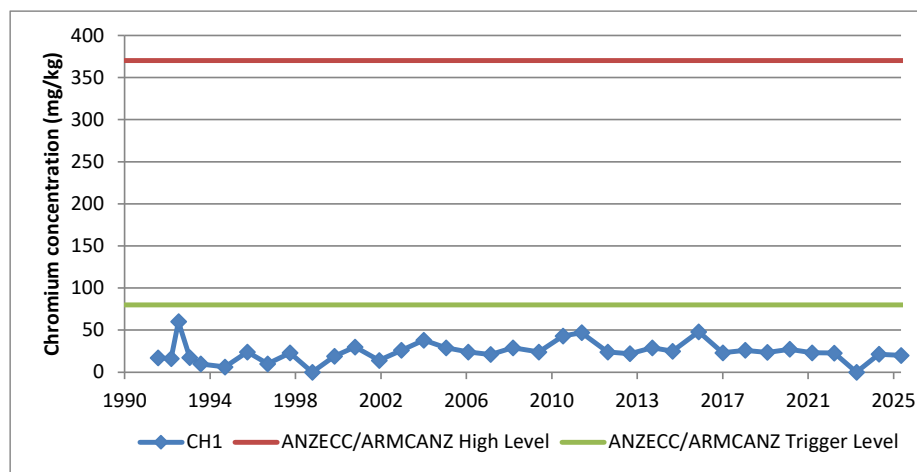
Chromium

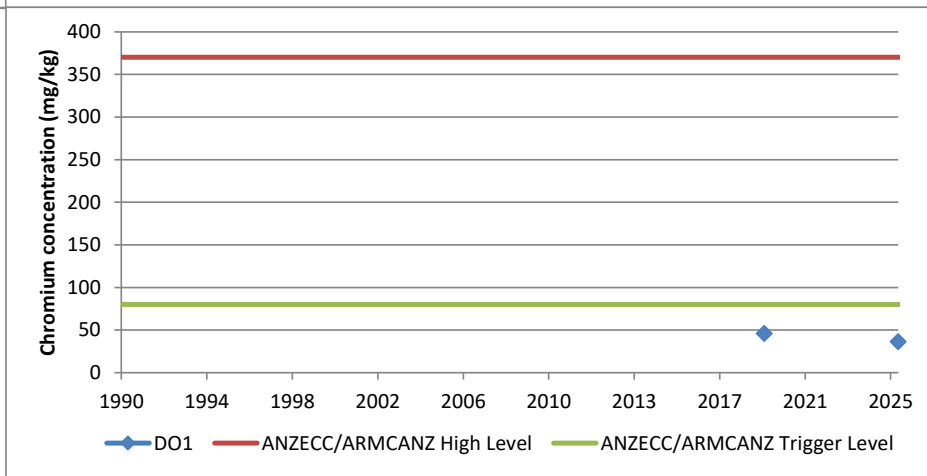
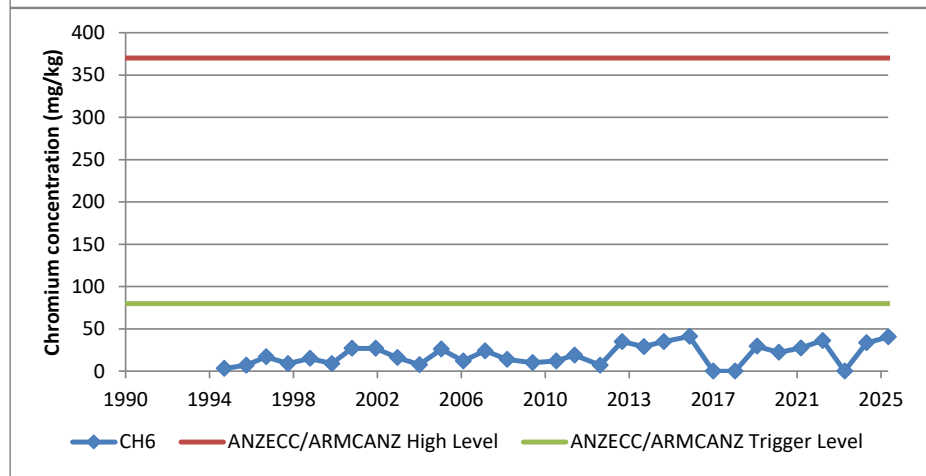
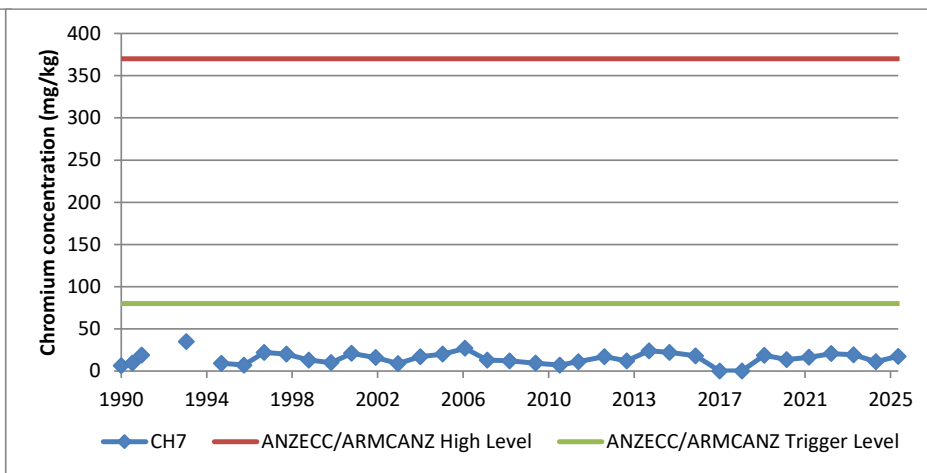
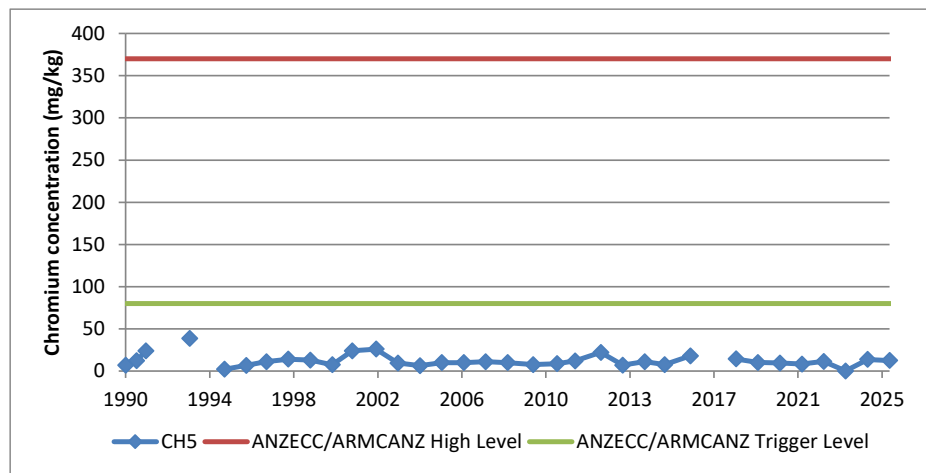
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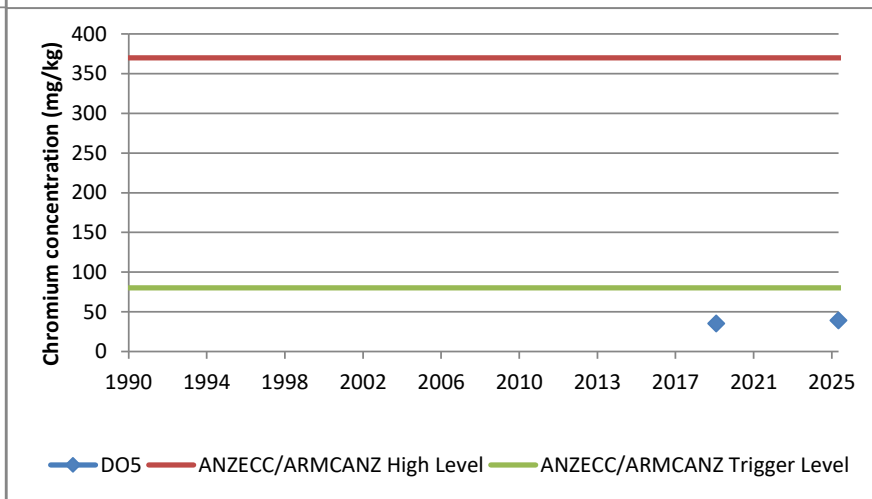
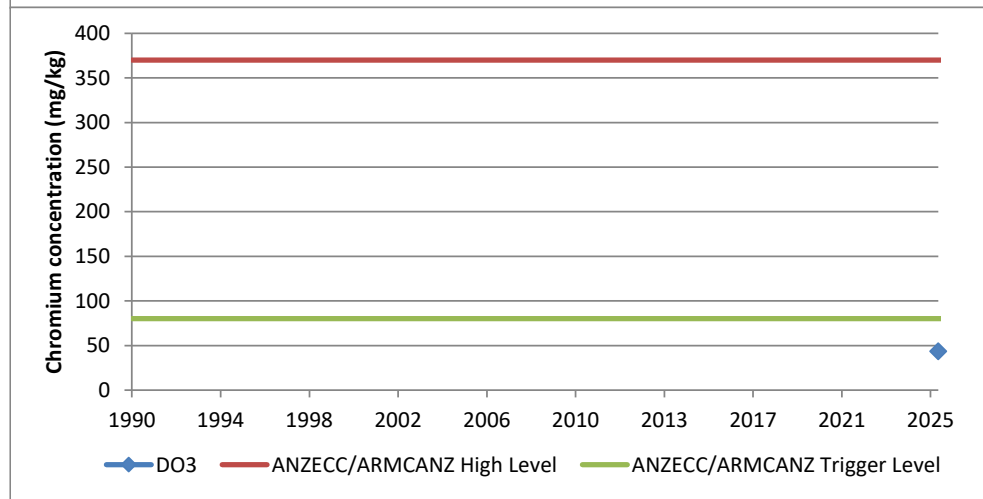
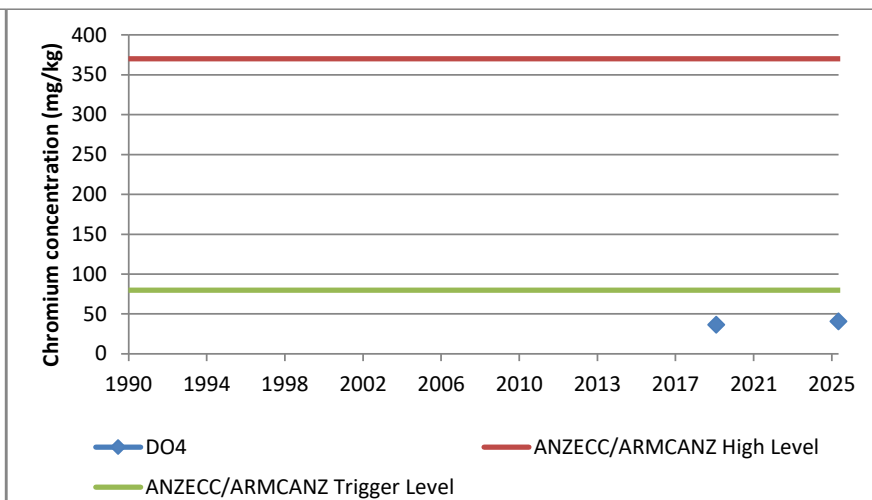
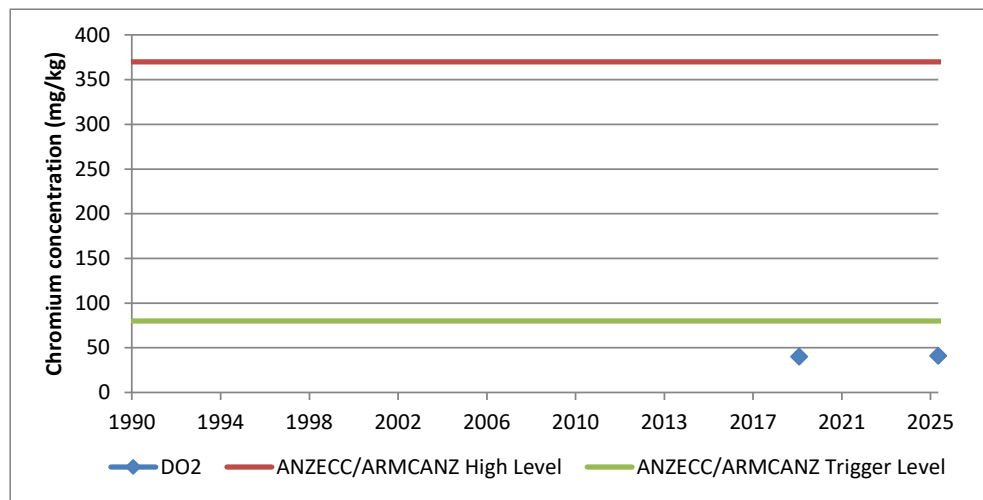
Note where <LOR half LOR is reported

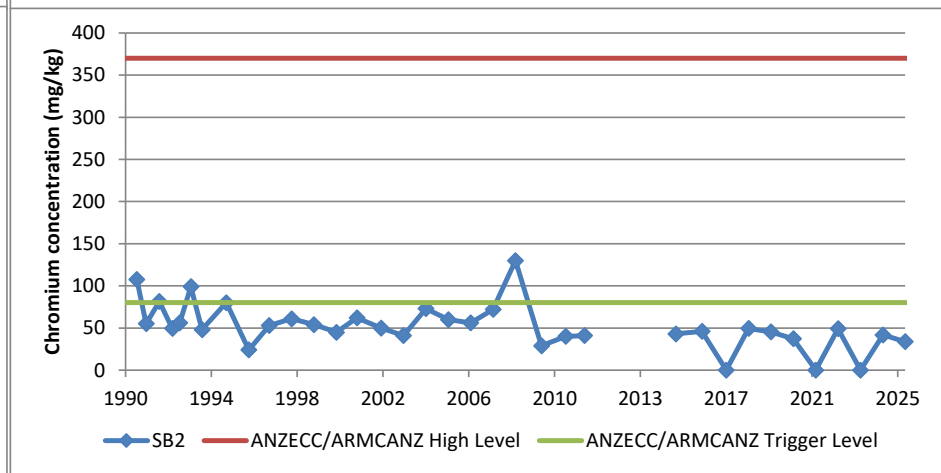
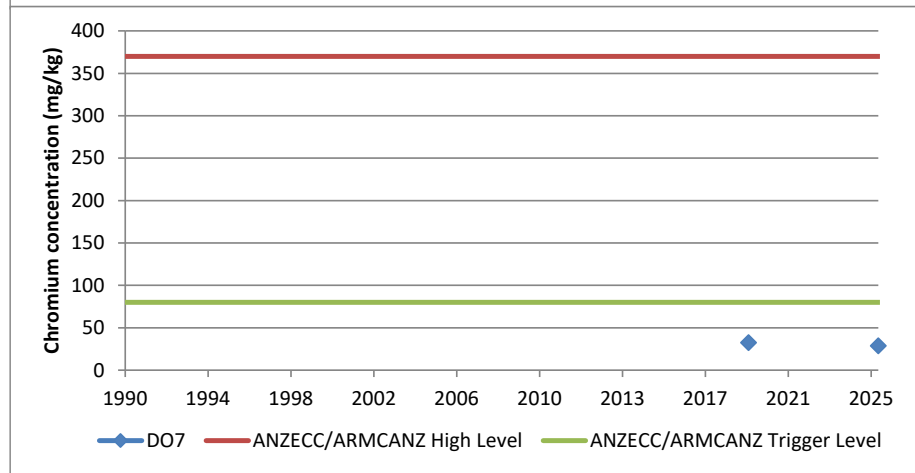
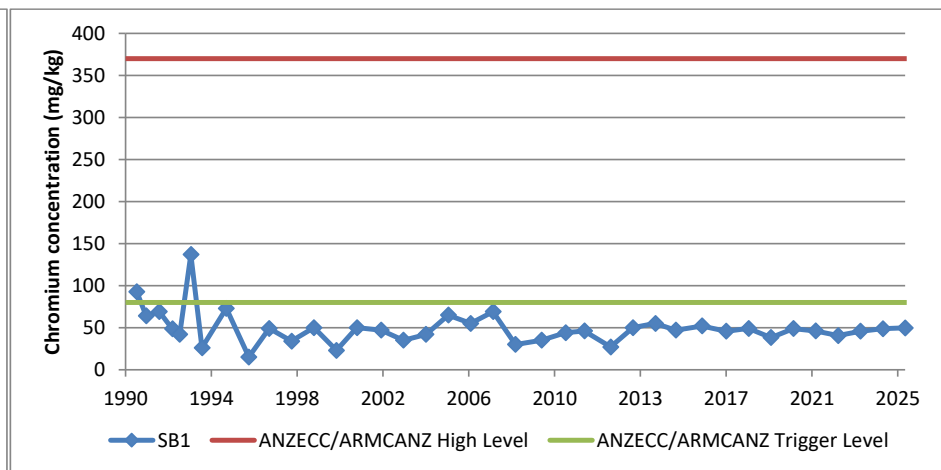
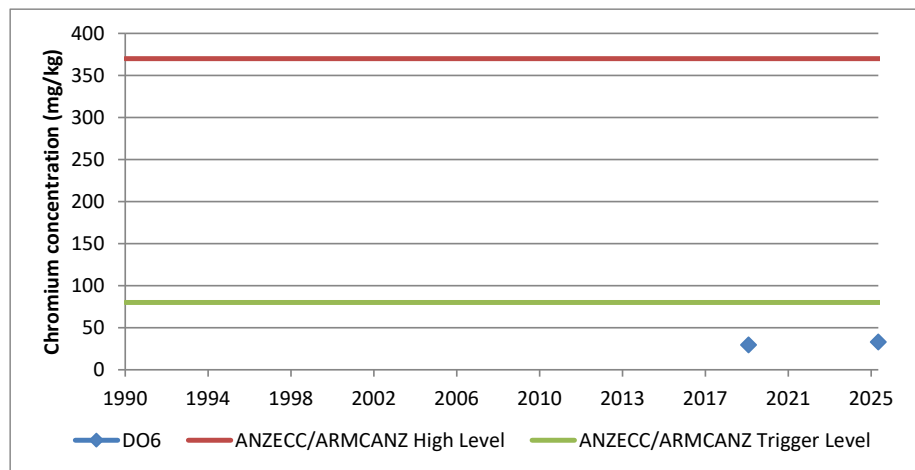
Exceedance of Guidelines

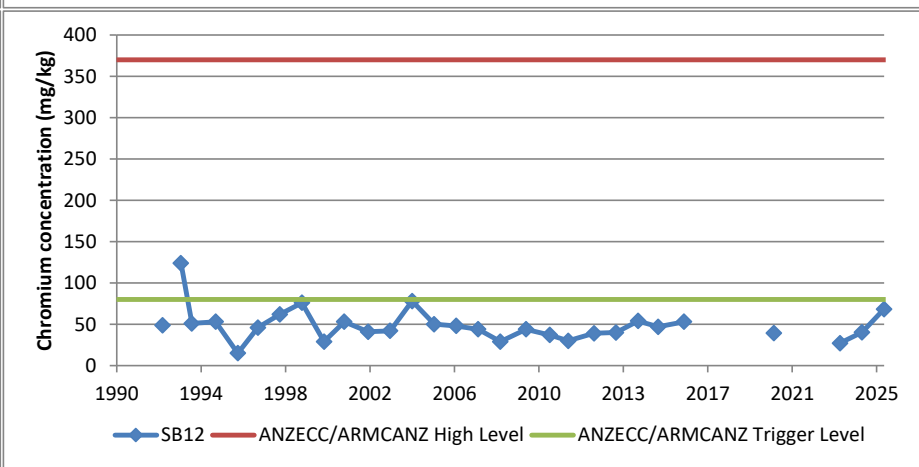
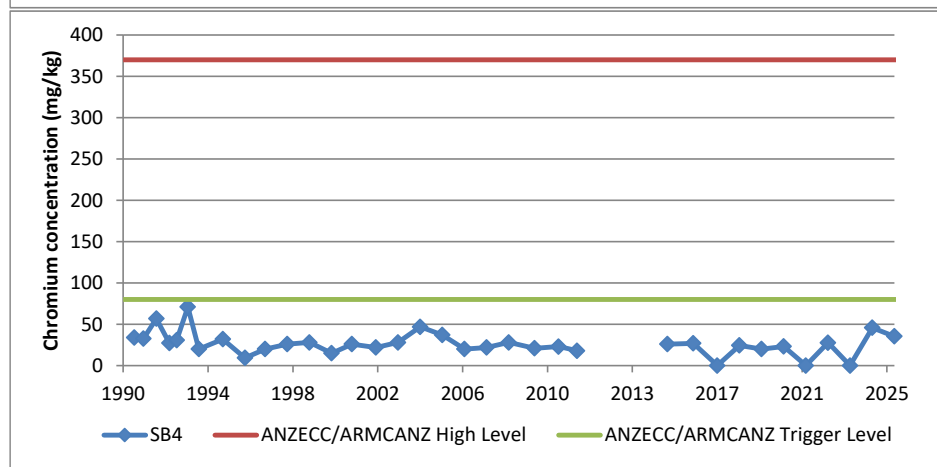
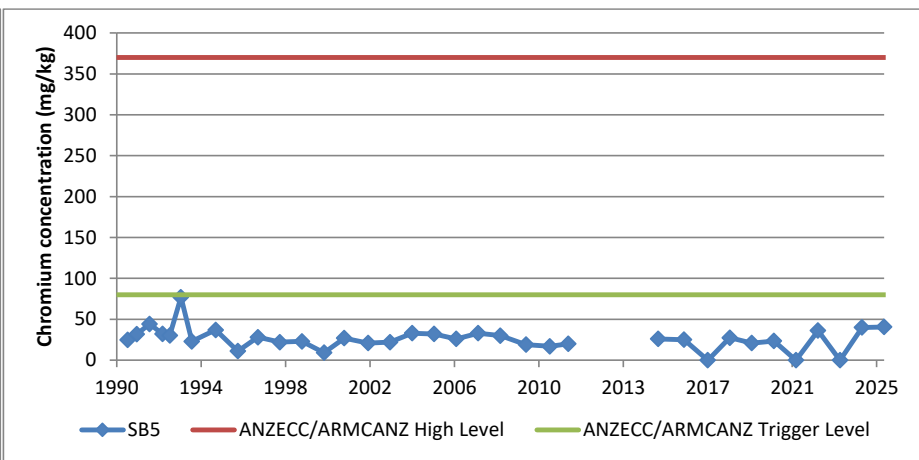
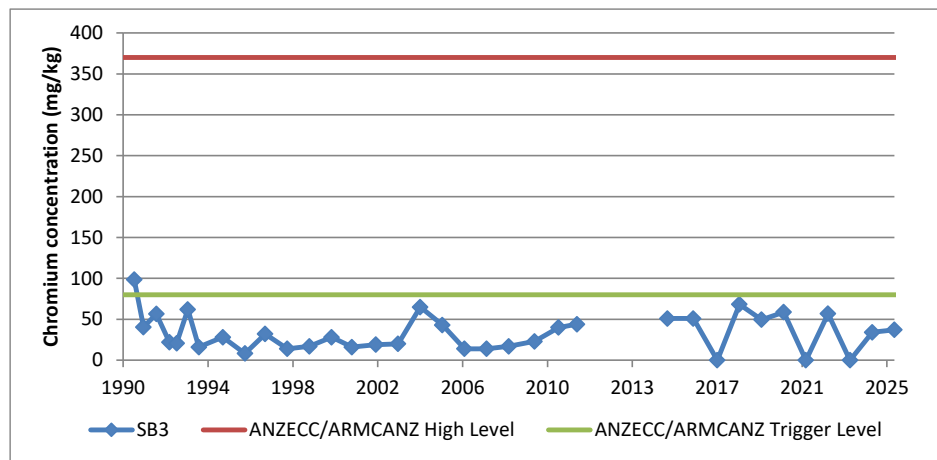
ANZECC/ARMCANZ Trigger Level	80
ANZECC/ARMCANZ High Level	370











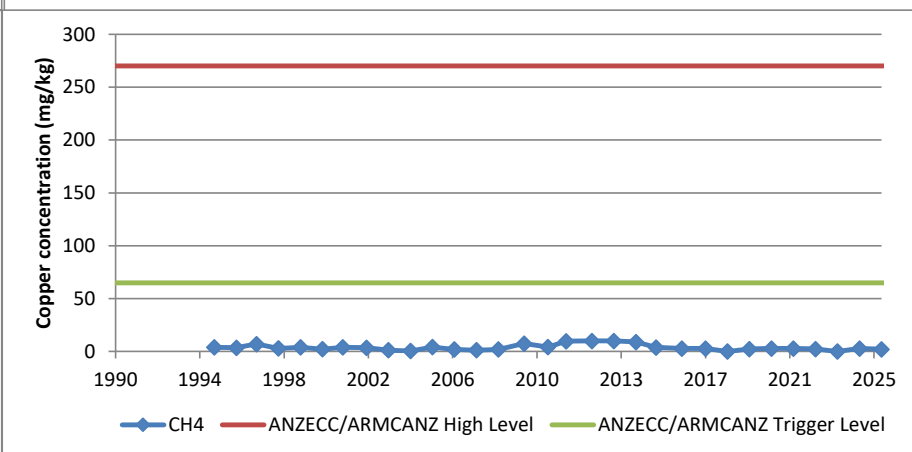
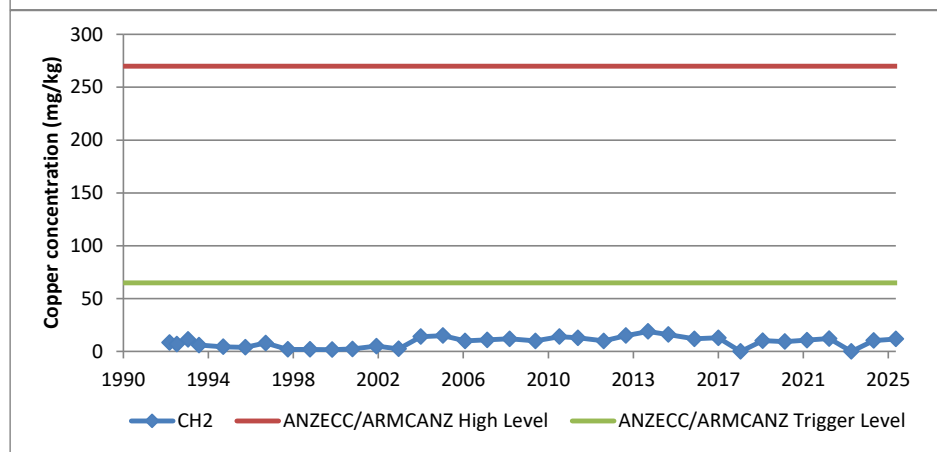
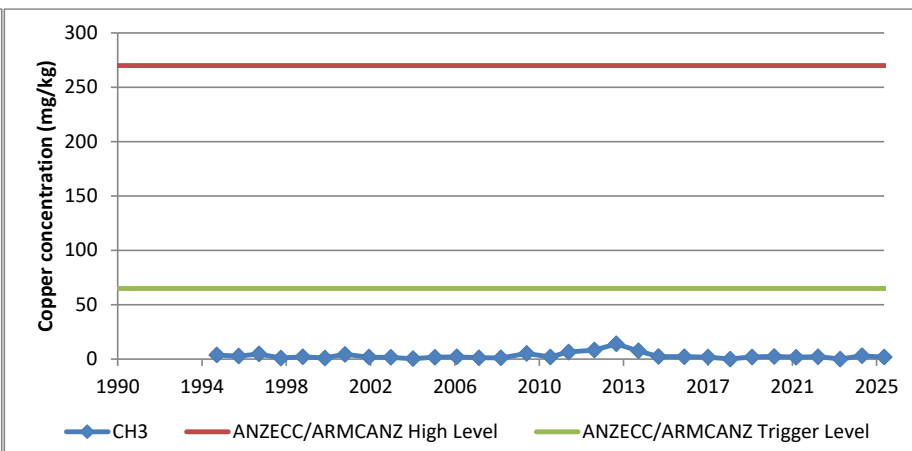
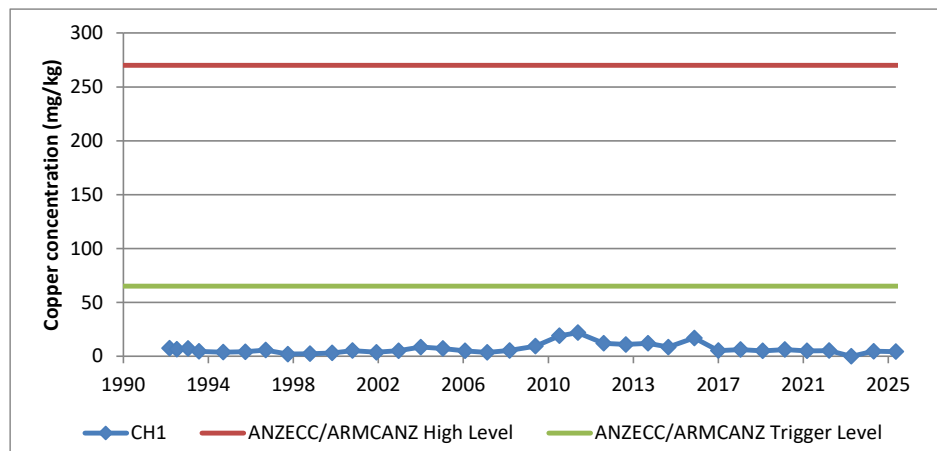
Copper

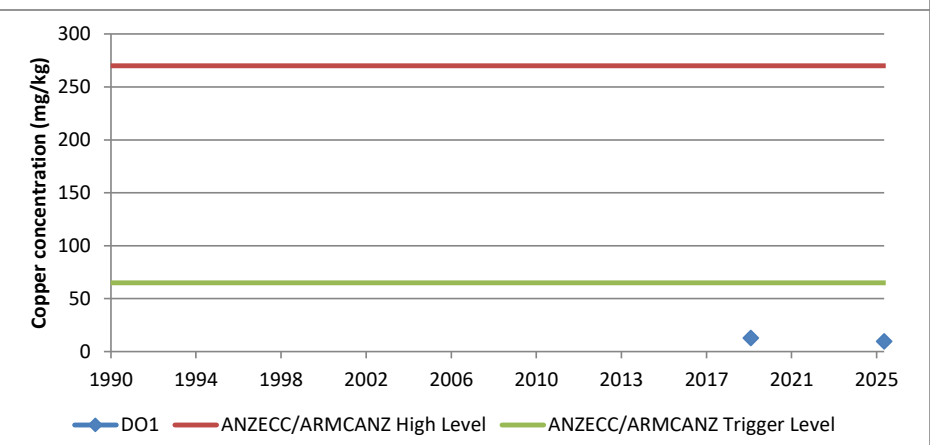
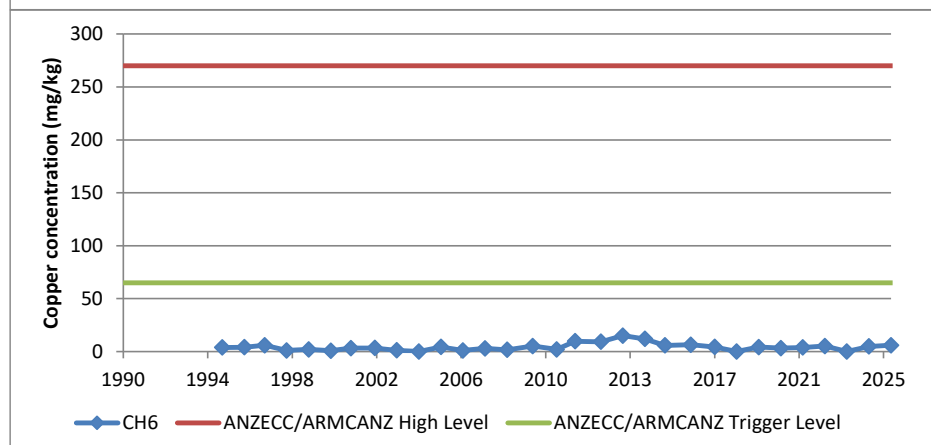
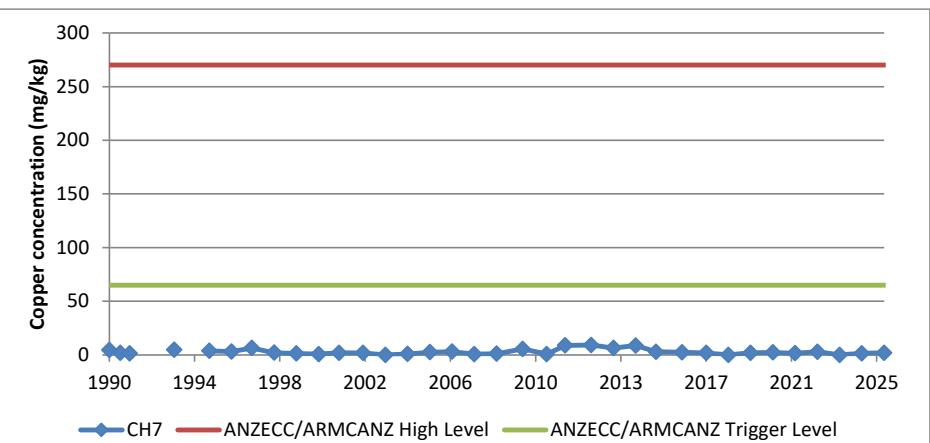
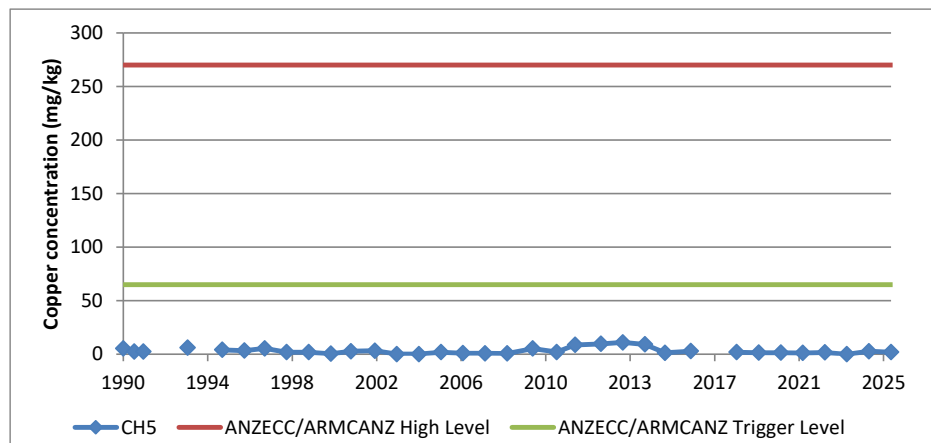
With Duplicates	Copper (mg/kg dry weight)																																									
	SITE	Dec-90	Jun-91	Nov-91	Jun-92	Jan-93	May-93	Nov-93	May-94	Jun-95	Jun-96	May-97	May-98	May-99	May-00	Apr-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	Jul-09	Aug-10	Jun-11	Aug-12	Aug-13	Aug-14	Jul-15	Sept-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25		
	CH1	NA	NA	NA	NA	NA	7.5	6.5	7.4	4.6	3.9	4.2	5.8	2	2-4.40	3.1	5.3	3.7	5.2	8.6	7.2/7.6b	5.0/4.0b	3.6	5.4	9.4/8.2b	19/19b	22	12	11	12	8.6	17	5.3	6.3	6.10	6.2	6.0	5.3	4.6	4.7	4.3	
	CH1a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8	NA	NA	NA	7.5	5	NA	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	CH2	NA	NA	NA	NA	NA	8.4	7	11.5	6	4.4	4	8	2	2	1.8-2.1a	2.4	5.1	2.5	14	15	10	11	12	10	14	13	10	15	19	16	12	12.9	12	10.20	9.4	10.7	12.2	10.4	10.4	11.8	
	CH2a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	14	17	16	21	14	12	12	11.5	10.5	9.6	11.1	11.5	9.4	11.3	11.4		
	CH3	NA	NA	NA	NA	NA	NA	NA	NA	3.7	2.7	4.7/4.8a	1	2	1	4.3	1.8	1.6	0.4	1.7	2.0/2.0b	1.2	1.1	5.1	1.9	6.5	8.2	14	7.5	2.3	2.1	1.8	1.8	1.90	2.4	1.7	2.1	2.9	3	1.8		
	CH4	NA	NA	NA	NA	NA	NA	NA	NA	4	3.6	7	3.0-4.0a	4	2.3	4	3.6	1.2	0.5	4.2	2	1.3	2.0/1.7b	7.5	4.2	9.8	10	10	9	3.8	2.9	2.8	<1.0	2.40	2.8	2.9	2.4	3.8	2.8	2.1		
	CH5	53	26	2.6	NA	NA	NA	6.1	NA	4.1	3.4	5.5	2	2	0.5-0.7	2.8	3.3	0.1	0.1	2	1	0.8	0.7	5.3	2.1	8.7	9.7	11	92	14	2.9	Refusal	2	1.50	1.5	1.2	1.7	1.3	2.8	2		
	CH5a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	3.0/3.3b	0.5	<0.1/<0.1b	1.4	NA	NA	NA	7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	CH6	NA	NA	NA	NA	NA	NA	NA	NA	3.9	4.1	6	1.0/1.0b	2	0.8	3.3	3.4	1.1	<0.1	4.4	1	3	1.6	5.2	2	9.7	9.2	15	12	5.8	6.4	4.3	4.1	4.20	3.2	3.8	5.2	1.8	4.8	6		
	CH7	4.6	1.9	1.3	NA	NA	NA	4.7	NA	3.8	3.1	6.4	2	1.3-2.0	0.7	1.9	1.8	<0.1	0.8	2.6	3	0.7	1.1	5.6	0.7	8.8	9.2	6.4	8.7	2.9	2.4	1.8	1.6	1.90	2.3	1.6	2.9	2	1.4	1.9		
	CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	SBI	NA	7.7	8.4	16.1	19.8	14	19.4	10.3	15	7.3	16	8	16	10.0-15.0	24	21	14	14	27	19	20	10	22	36	41	25	38	60	56	49	26.6	33.8	28.10	36.8	35.2	34.5	40.1	46.6	50		
	SBIa	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	18	NA	NA	19	20	14	20	45	28	NA	37	67	54	49	34.4	27	31.20	32.7	35.9	41.5	41.0	48.2	55	
	SBIb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SBIc	NA	6.6	4.6	1.5	15.8	15	15.9	19	12	8	13	12	12	5.5	16	12	10	14	17	15	15	29	16	22	25	NA	NA	NA	NA	27	26	22.3	26.2	23.40	20.4	21.5	28.5	19.8	25.3	20.7	
	SBIc	NA	5.5	4.4	10.9	8.5	6	6.4	5.6	2.5	3.8	8.1	2	3	2	2.4	4.0/4.2a	2.2	12	11	3	2.3	2.6	2.0	20	23	NA	NA	NA	33	25	32.7	32.5	24.70	23.2	26.4	28.8	27.0	26.3	17.8		
	SBIc	NA	1.7	8.7	11.3	5.9	7.1	5.9	4.6	2.4	2.4	4.5	4	4	1.2	4.4	4.2	3.6	8	8.5	3	3.3	4.5	8.6	7.3	4.7	NA	NA	NA	9	7.8	9	5.6	5.90	5.5	13.9	8.3	10.2	15.1	12.8		
	SBIc	NA	2.3	9.3	6.8	5.8	6.2	5.6	4.8	3.4	2.6	5	2	3	13	3.9	3.7	3.3	5.1	6.6	4	4.7	4.2	6.8	16	4.3	NA	NA	NA	7.5	5.9	7.1	5.2	4.50	4.7	14.5	10	10.5	11.3	12.1		
	SBI2	NA	NA	NA	NA	25.2	NA	19.2	18.4	13	14	15	21	24	29	36	22	13.0/14.0b	15	27	23	18	14	21	32	35	44	34	60	46	54	Refusal	Refusal	Refusal	25	NA	NA	15.5	21.6	29.2		
	SBI2a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.0b/37.0	NA	NA	NA	NA	140	NA	NA	NA	NA	NA	Refusal	Refusal	Refusal	NA	NA	NA	NA	NA	NA	
	DO1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.70	NA	NA	NA	NA	NA	9.6	
	DO2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.2
	DO3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.4	
	DO4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.20	NA	NA	NA	NA	NA	7.6	
	DO4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.20	NA	NA	NA	NA	NA	7.2	
	DO5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.40	NA	NA	NA	NA	NA	7.6	
DO6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.30	NA	NA	NA	NA	NA	5.7		
DO7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.10	NA	NA	NA	NA	NA	5.5			
DO7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.00	NA	NA	NA	NA	NA	6.6			

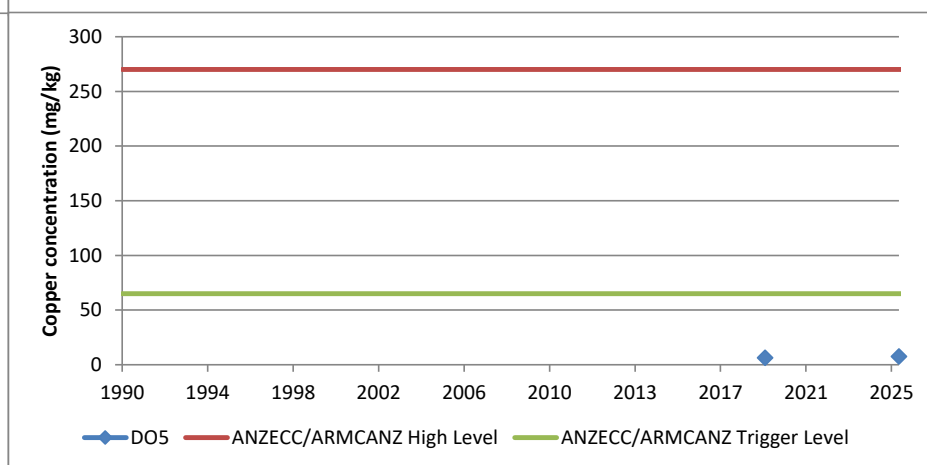
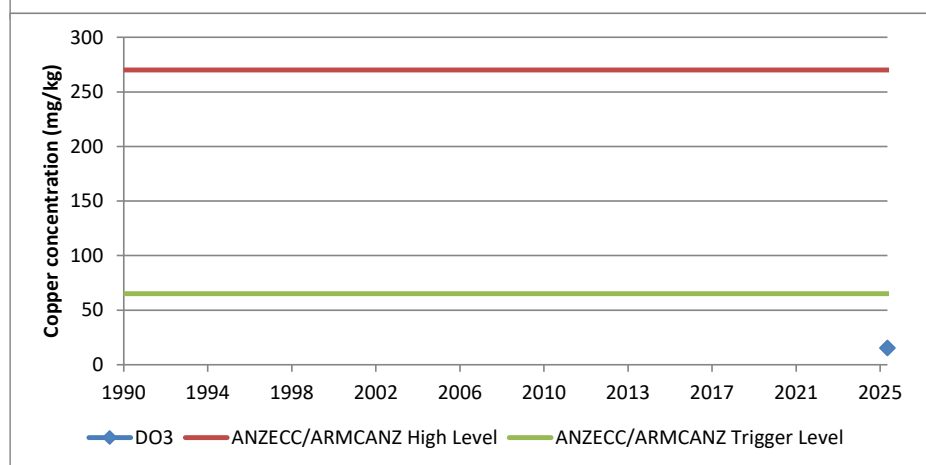
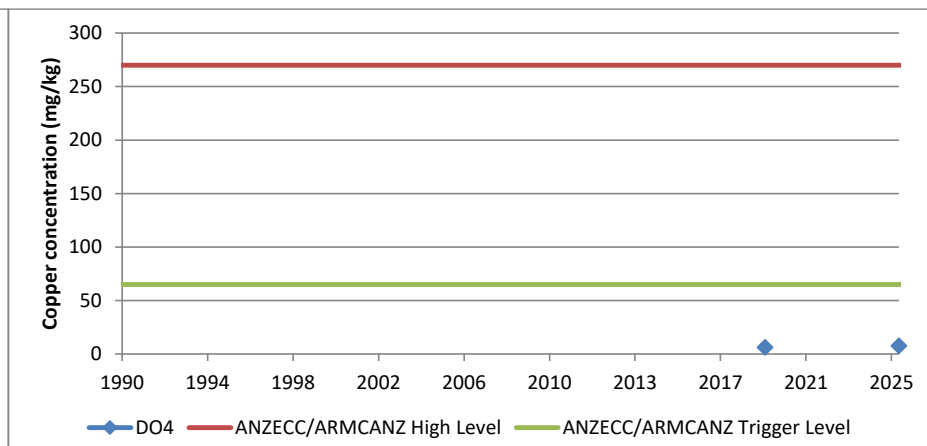
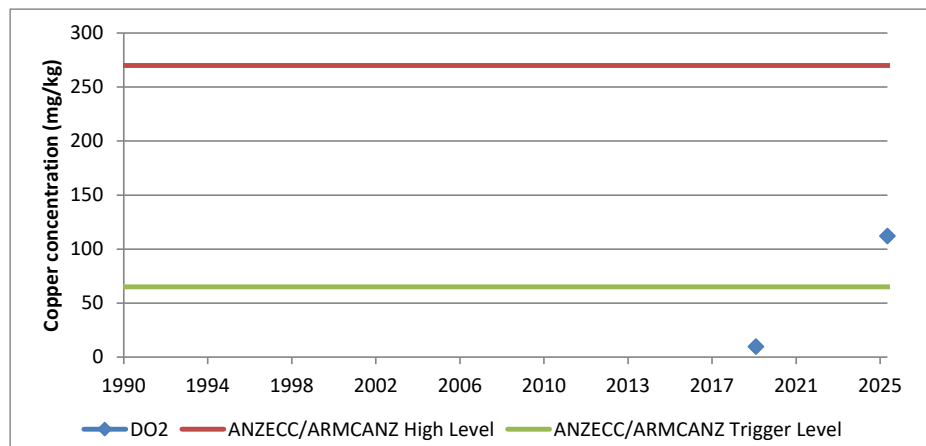
Note where <LOR half LOR is reported

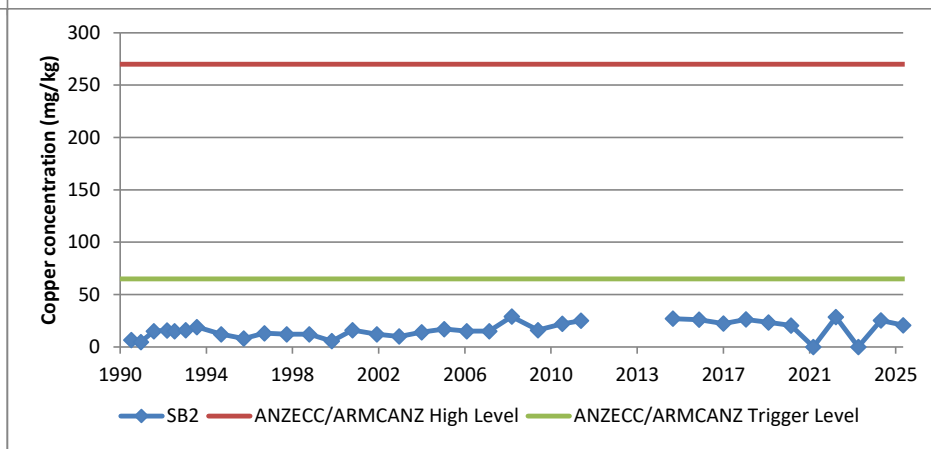
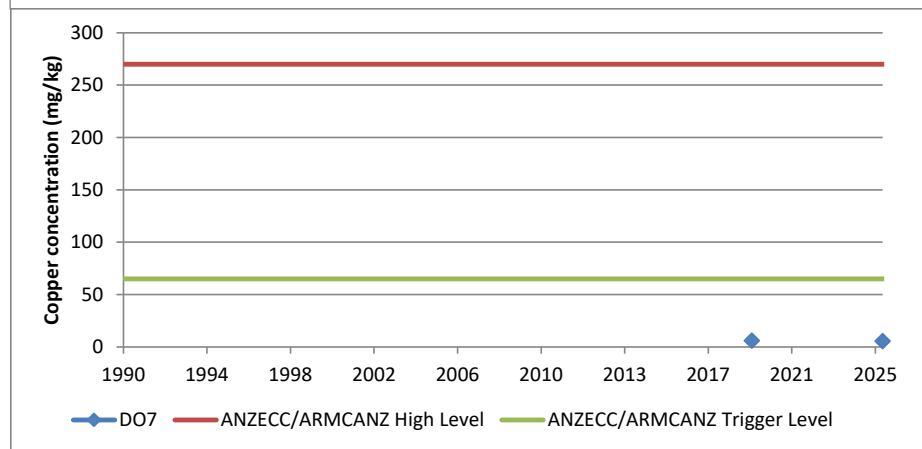
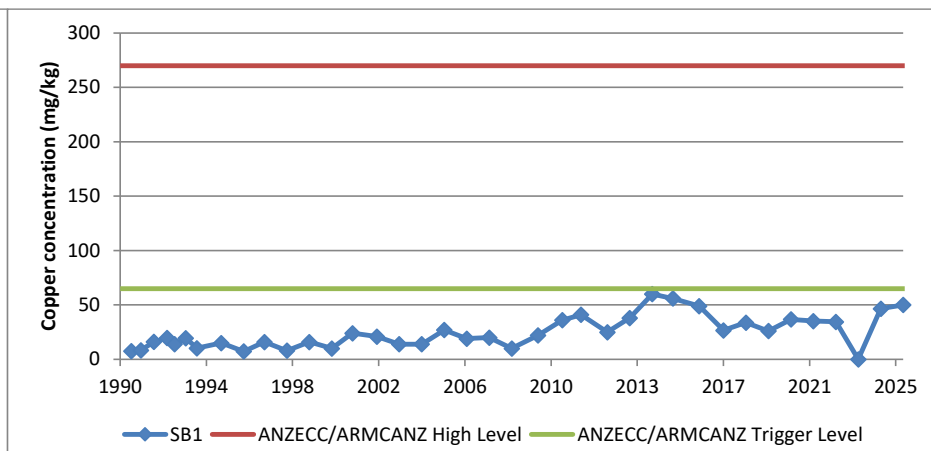
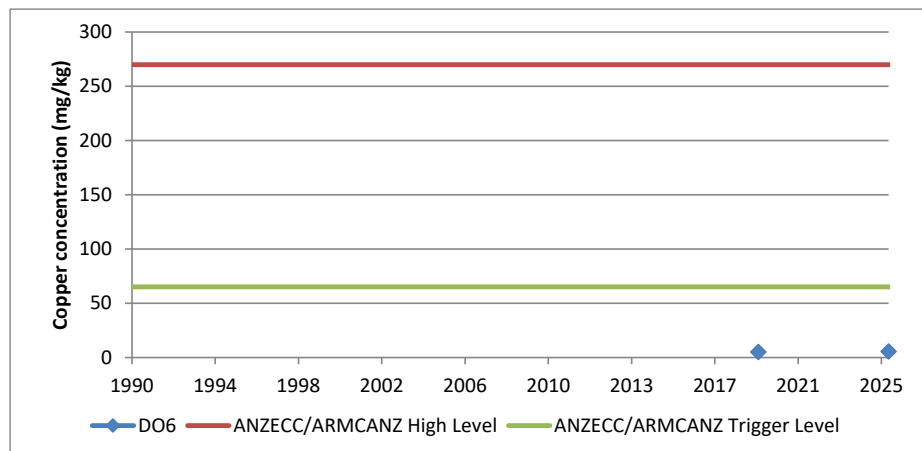
Exceedance of Guidelines

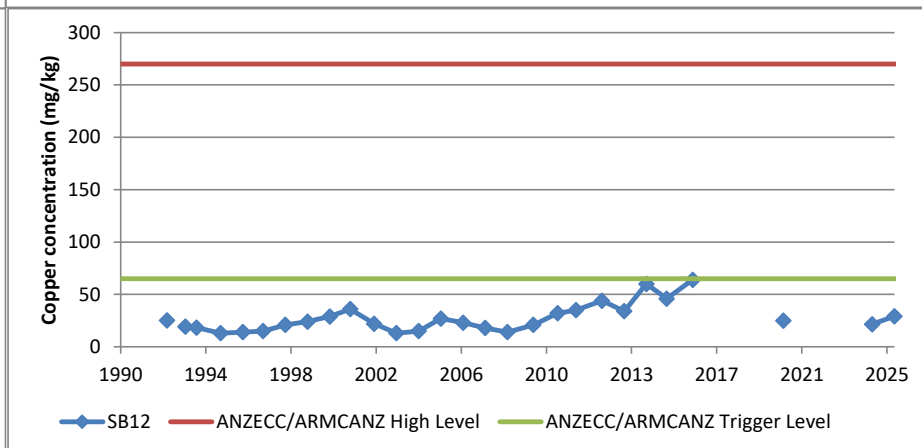
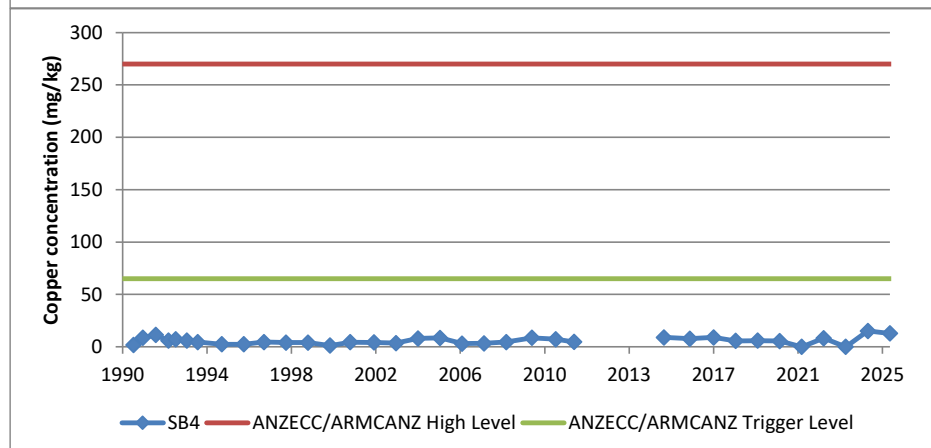
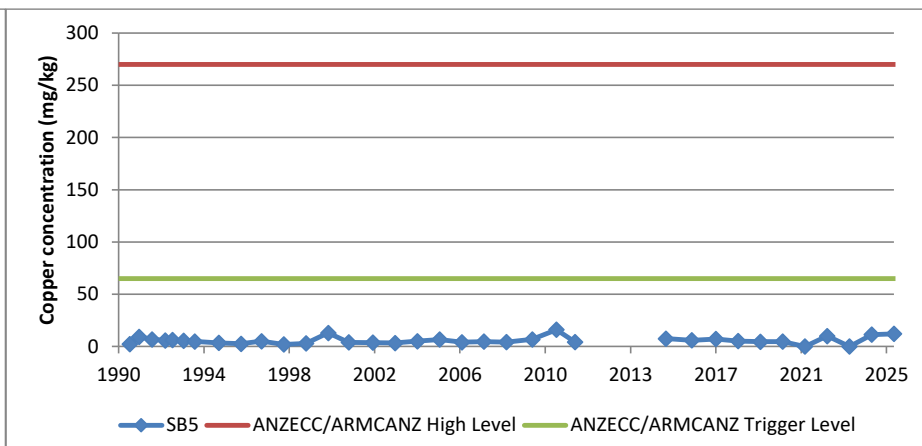
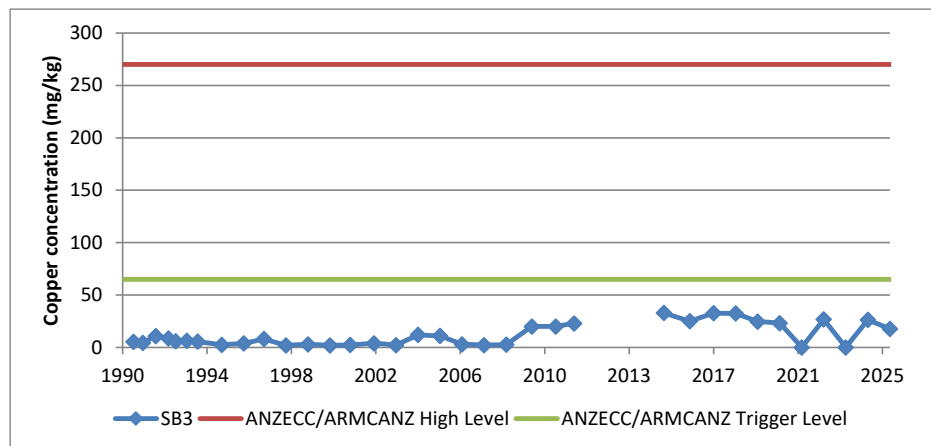
ANZECC/ARMCANZ Trigger Level	65
ANZECC/ARMCANZ High Level	270











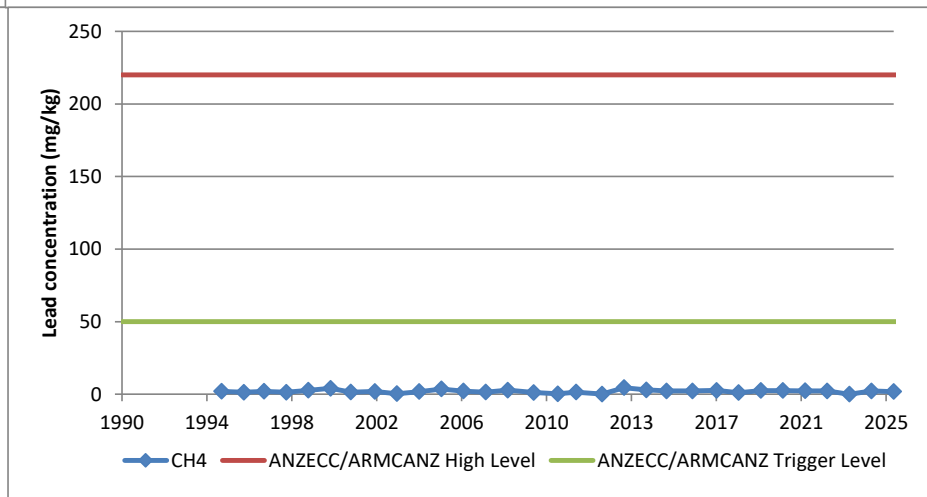
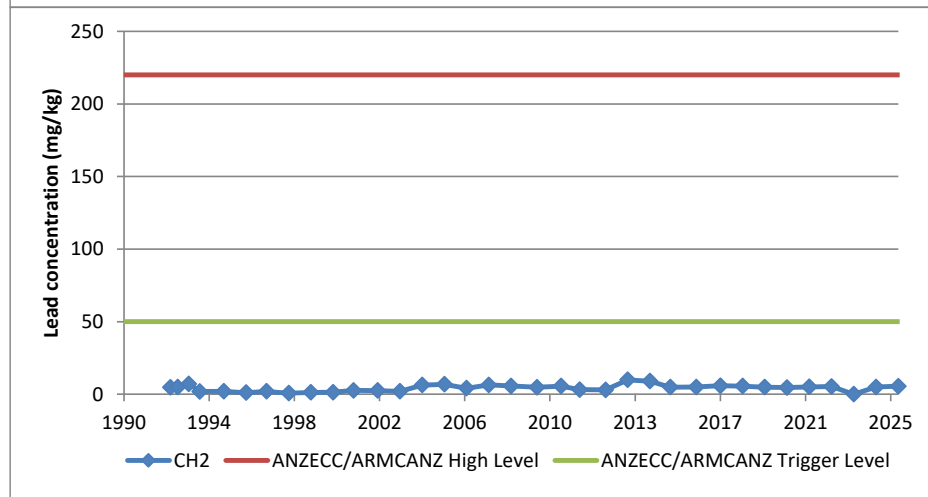
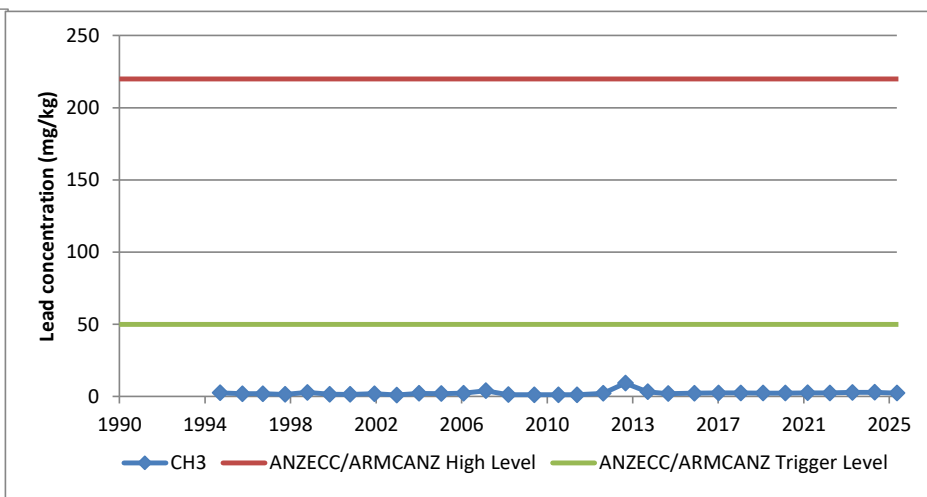
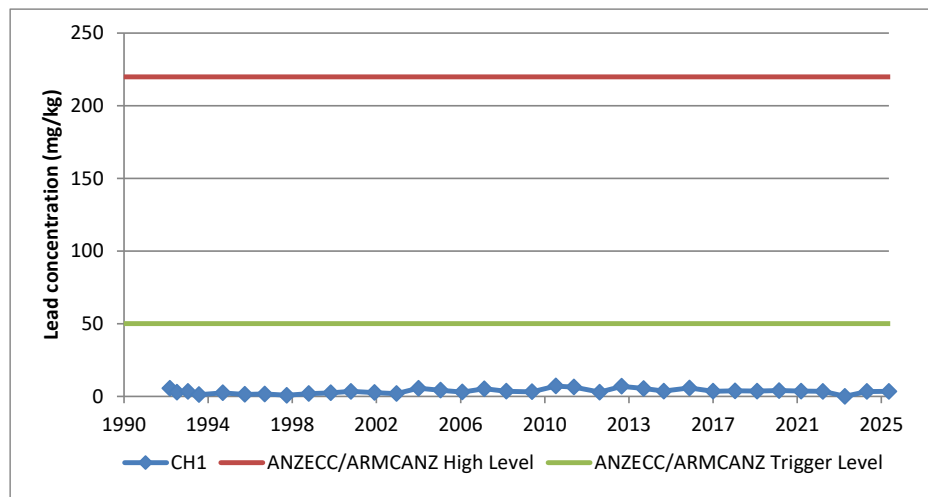
Lead

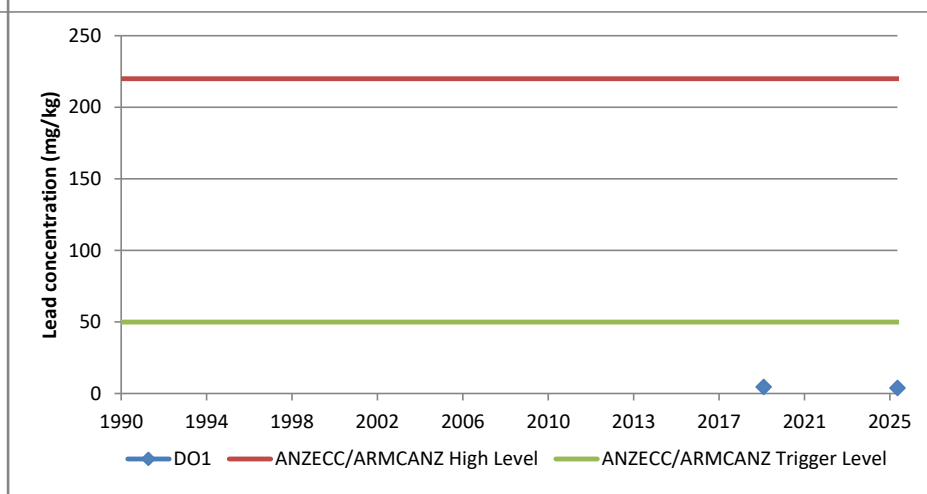
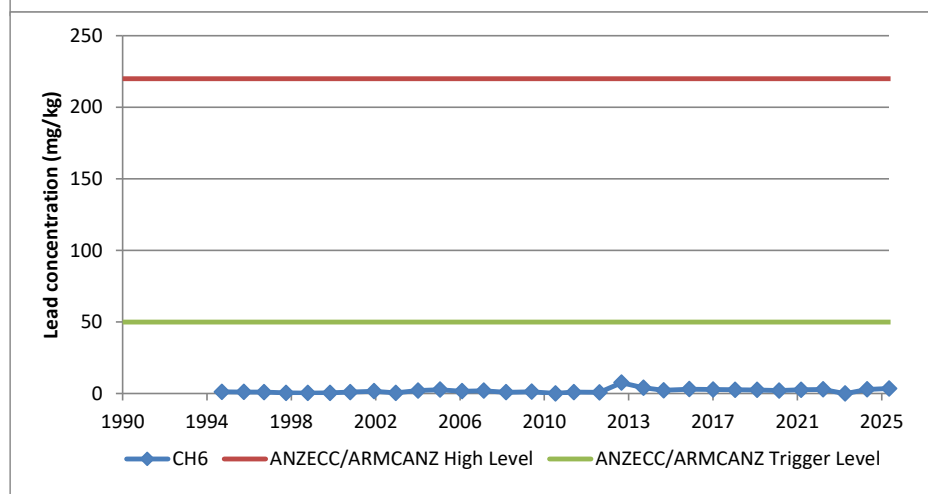
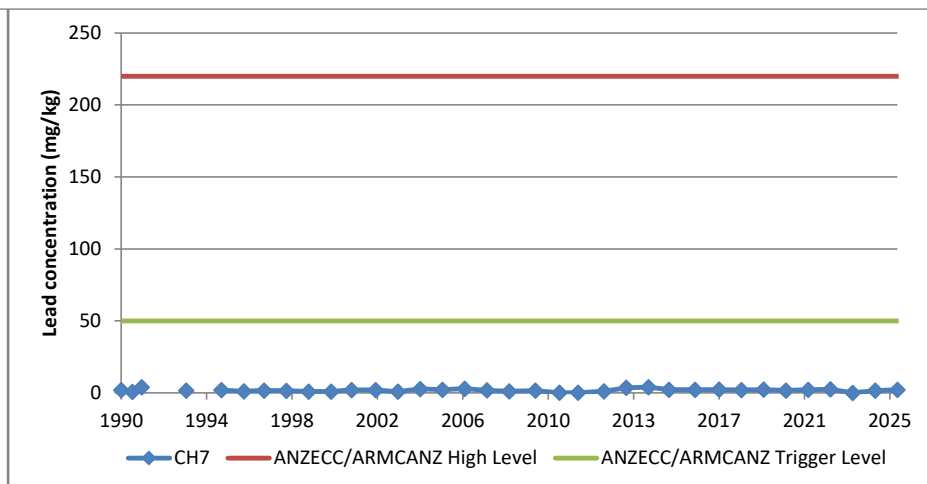
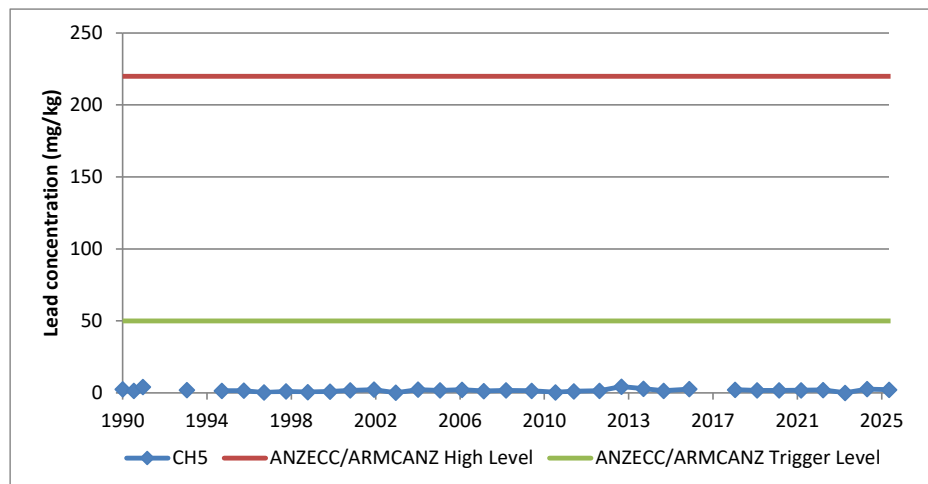
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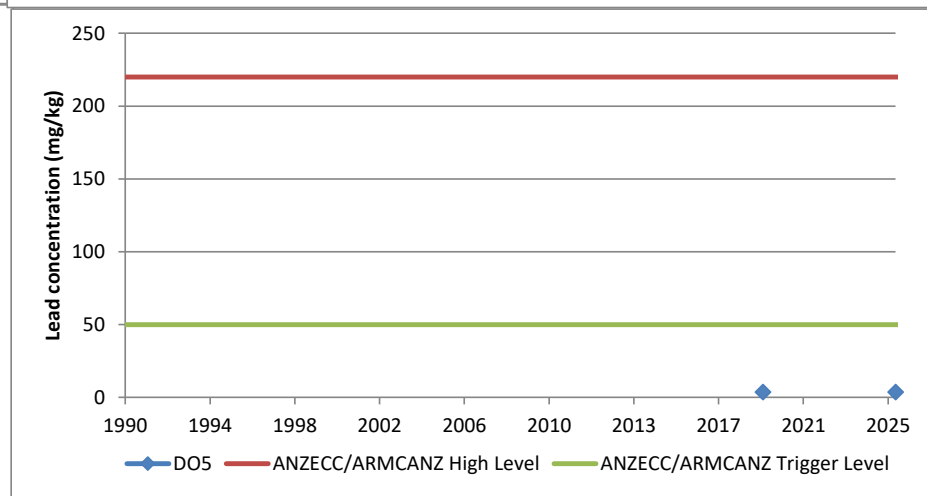
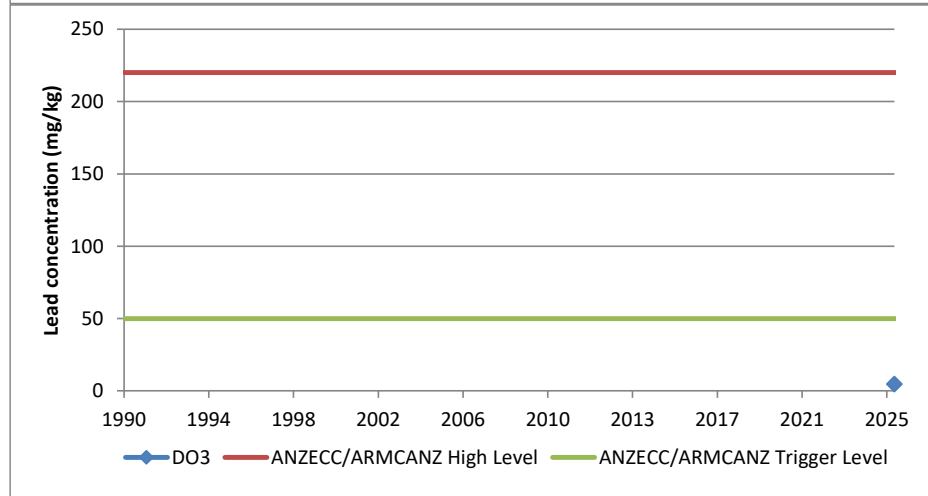
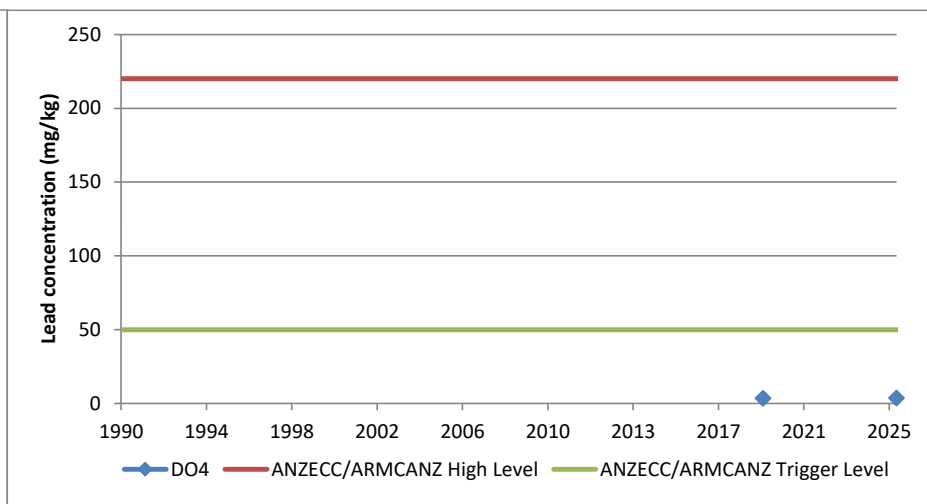
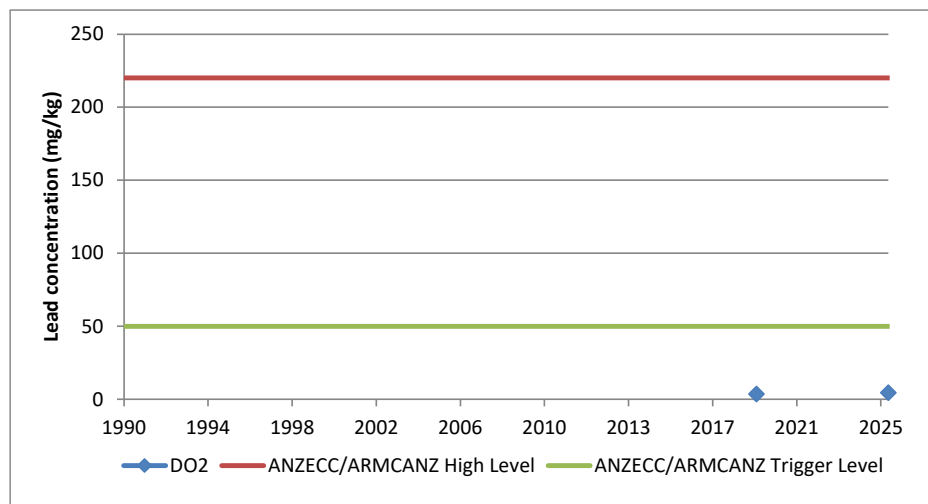
Note where <LOR half LOR is reported

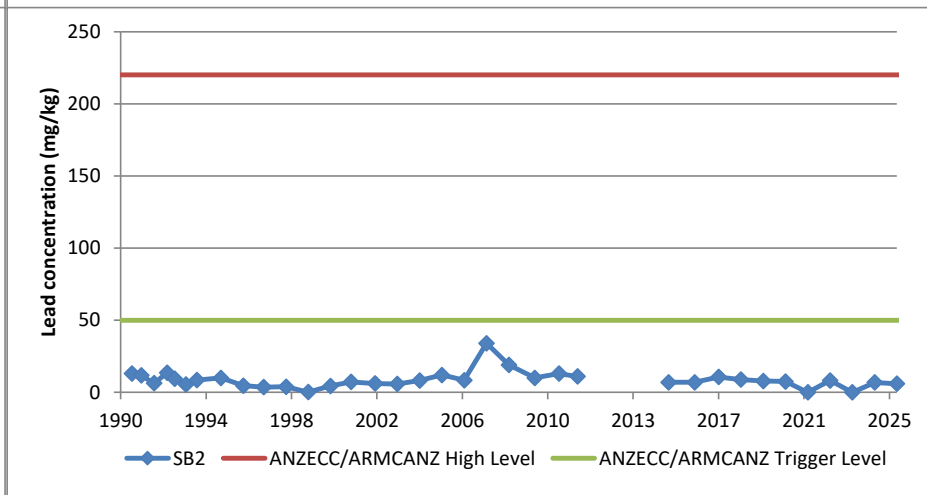
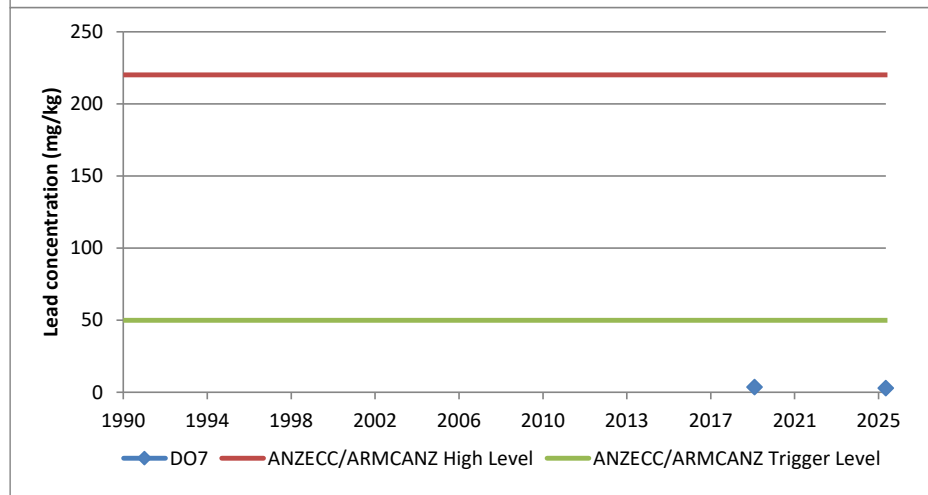
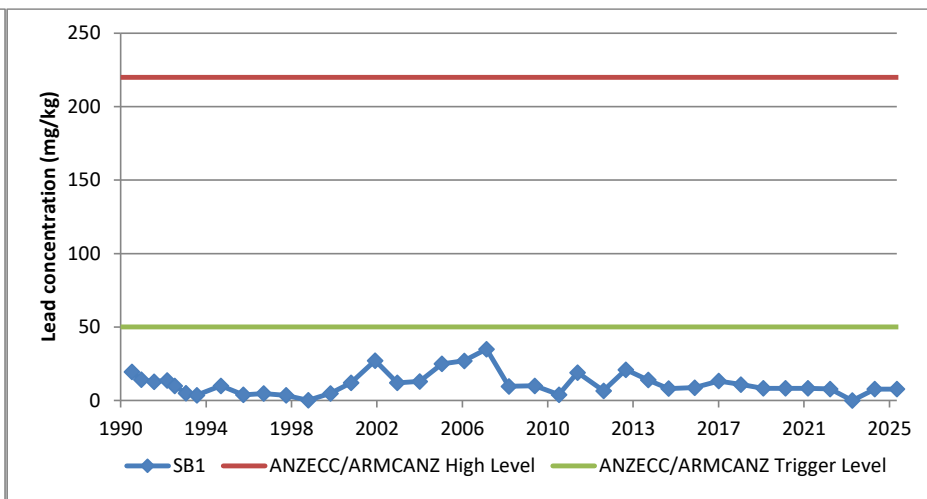
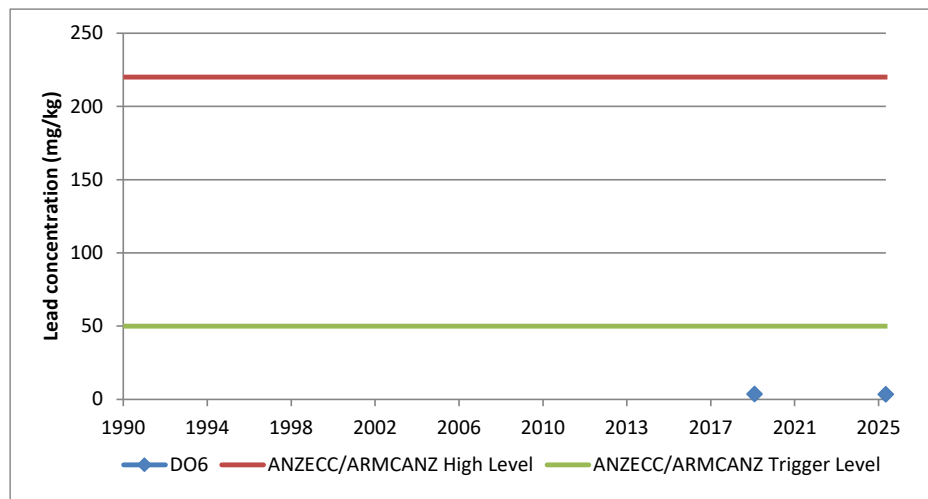
Exceedance of Guidelines

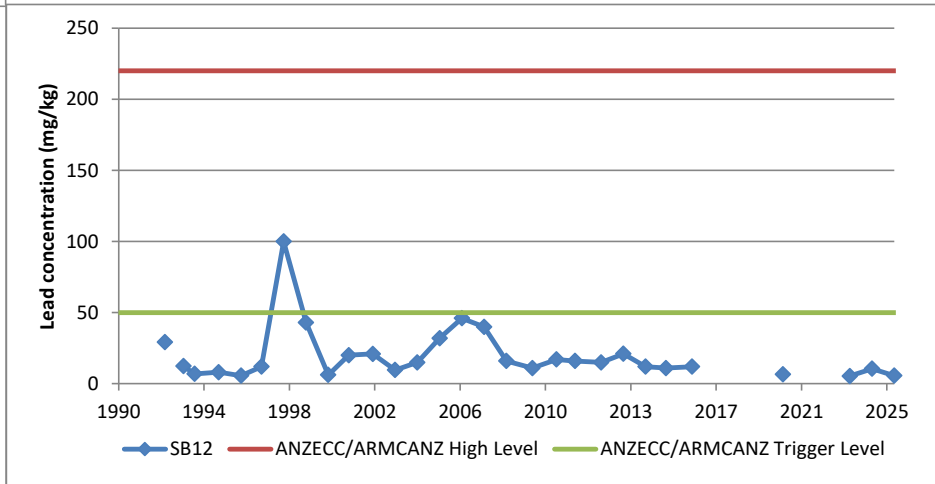
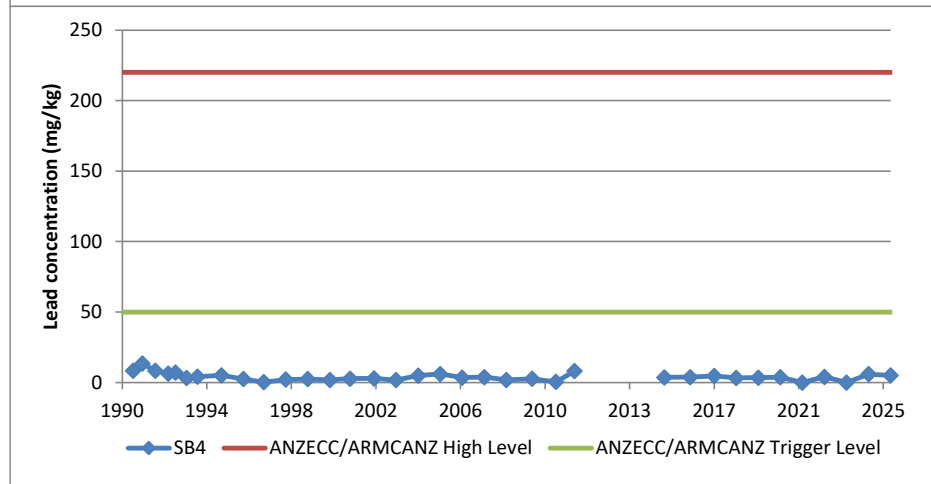
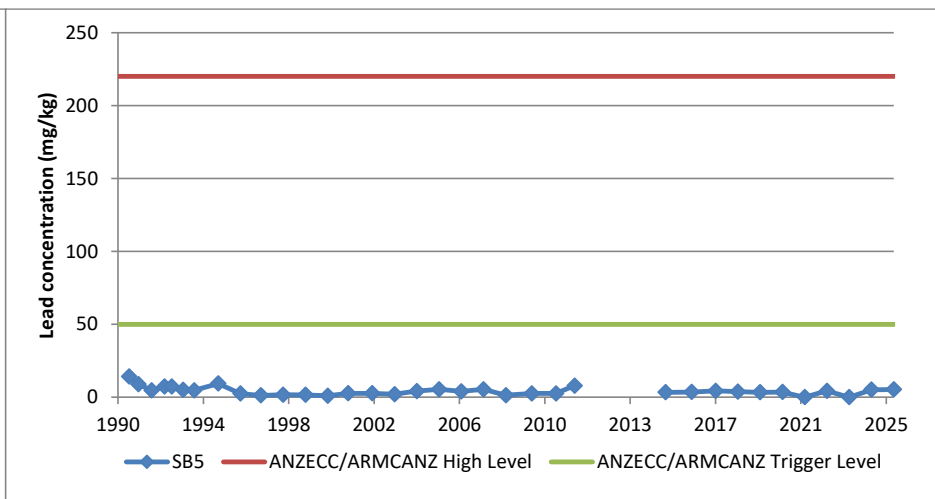
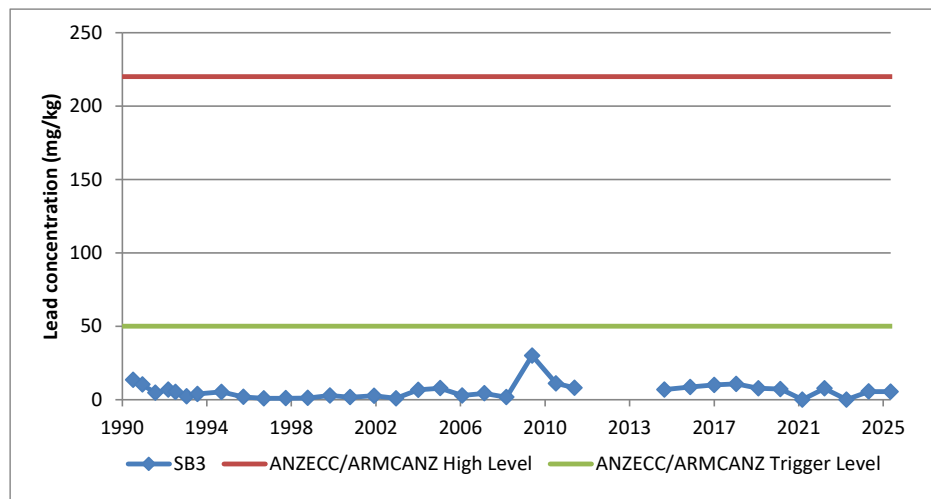
ANZECC/ARMCANZ Trigger Level	50
ANZECC/ARMCANZ High Level	220











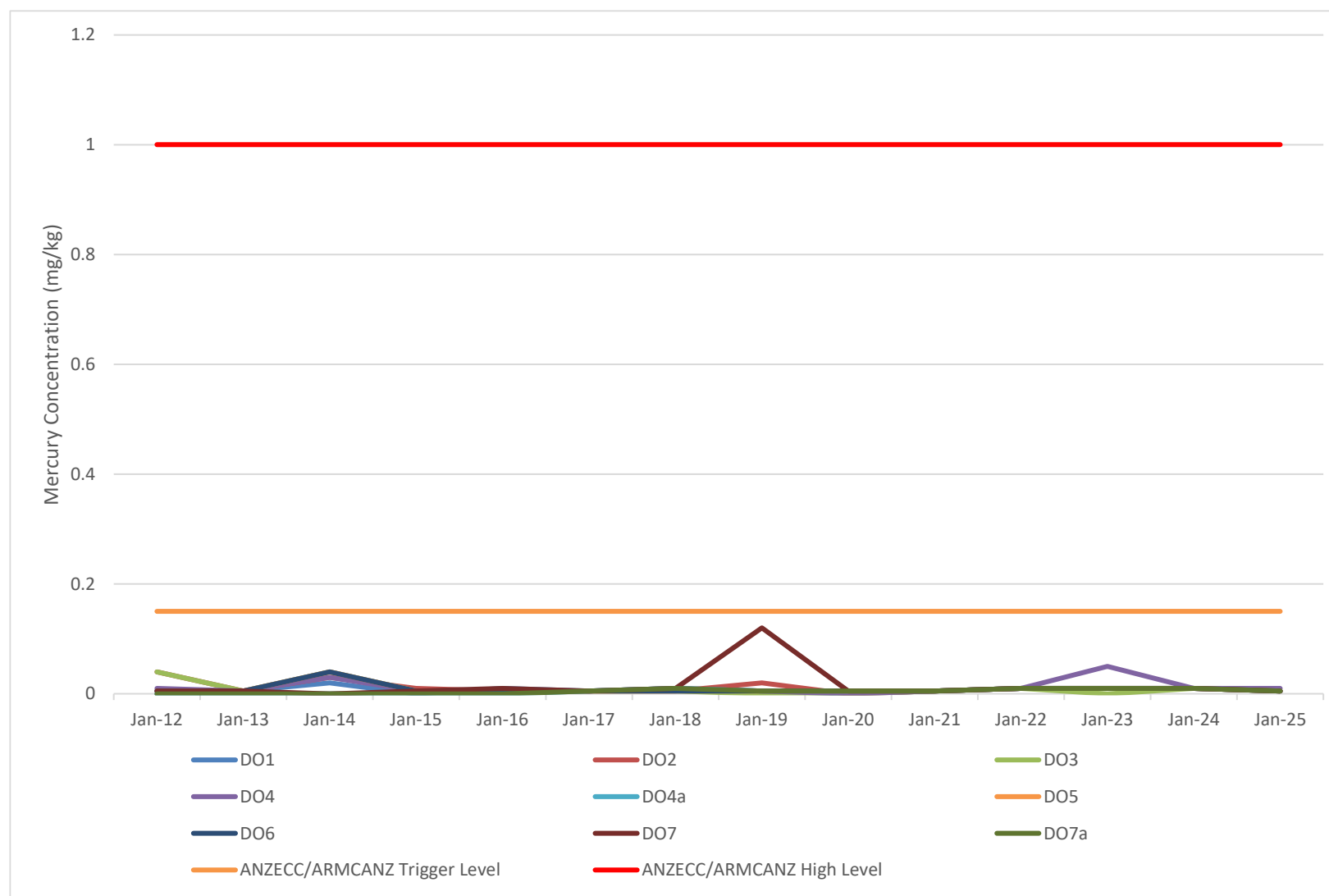
Mercury

Mercury (mg/kg dry weight)															
With Duplicates	SITE	Aug-12	Aug-13	Aug-14	Jul-15	Sept-16	Oct-17	Oct-18	Oct-19	Oct-20	Nov-21	Oct-22	Oct-23	Oct-24	Oct-25
	DO1	0.005	0.005	0.02	0.01/0.01a	0.01	0.005	0.01	0.005	-	0.005	0.01	0.01	0.01	0.005
	DO2	0.04	0.005	0.03	0.01	0.005	0.005	0.005	0.02	-	0.005	0.01	0.01	0.01	0.005
	DO3	0.04	0.005	0.04	0.005	0.005	0.005	0.005	-	-	0.005	0.01	Refusal	0.01	0.005
	DO4	0.01	0.005	0.03	0.005	0.005	0.005	0.01	0.005	-	0.005	0.01	0.05	0.01	0.01
	DO4a	NA	NA	NA	NA	NA	0.005	0.01	0.005	0.005	0.005	0.01	0.01	0.01	0.005
	DO5	0.005	0.005	0.04	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.005
	DO6	0.005	0.005	0.04	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.005
	DO7	0.005	0.005	0.03/0.07a	0.005	0.01	0.005	0.01	0.12	0.005	0.005	0.01	0.01	0.01	0.005
	DO7a	NA	NA	NA	NA	NA	0.005	0.01	0.005	0.005	0.005	0.01	0.01	0.01	0.005

Note where <LOR half LOR is reported

Exceedance of Guidelines

ANZECC/ARMCANZ Trigger Level	0.15
ANZECC/ARMCANZ High Level	1



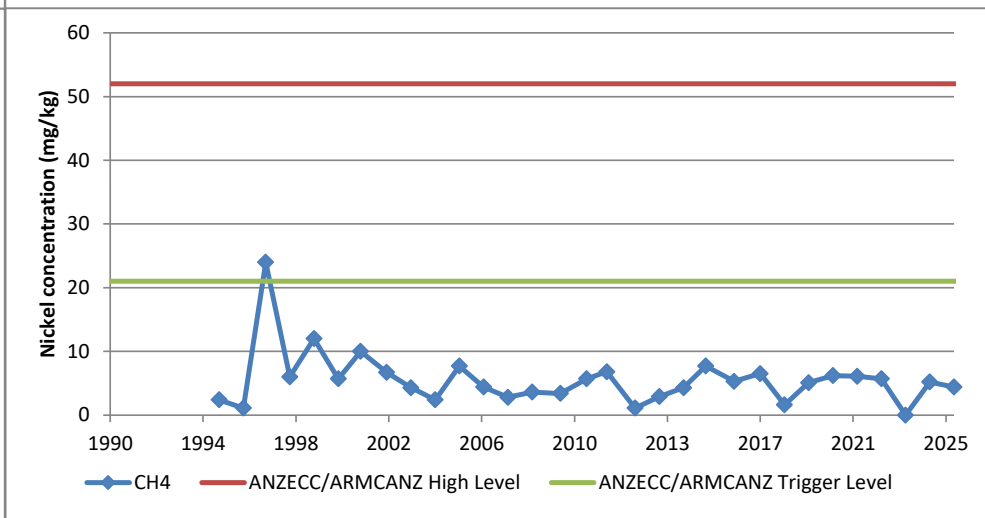
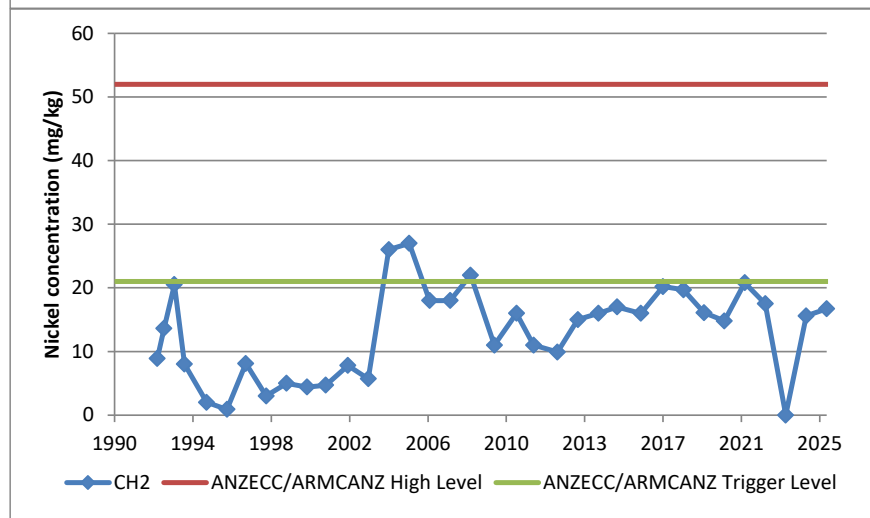
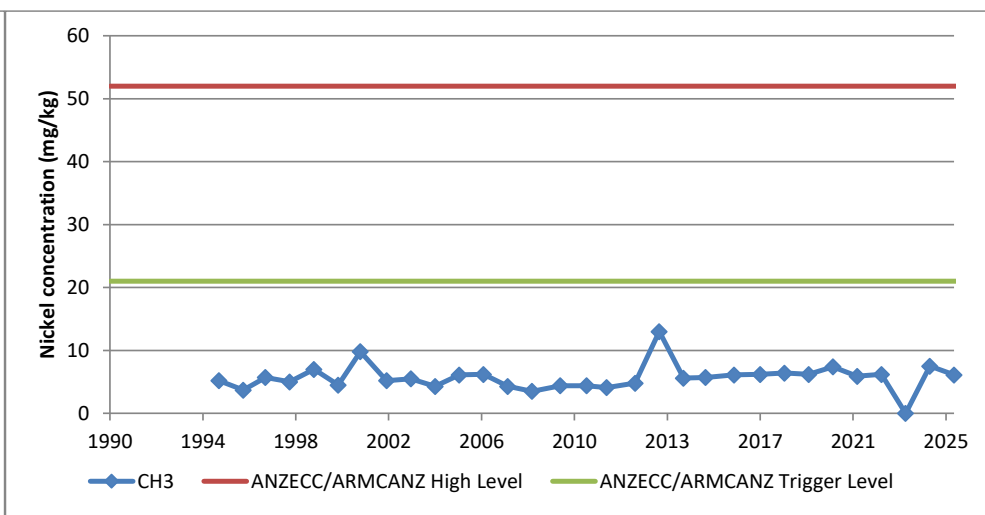
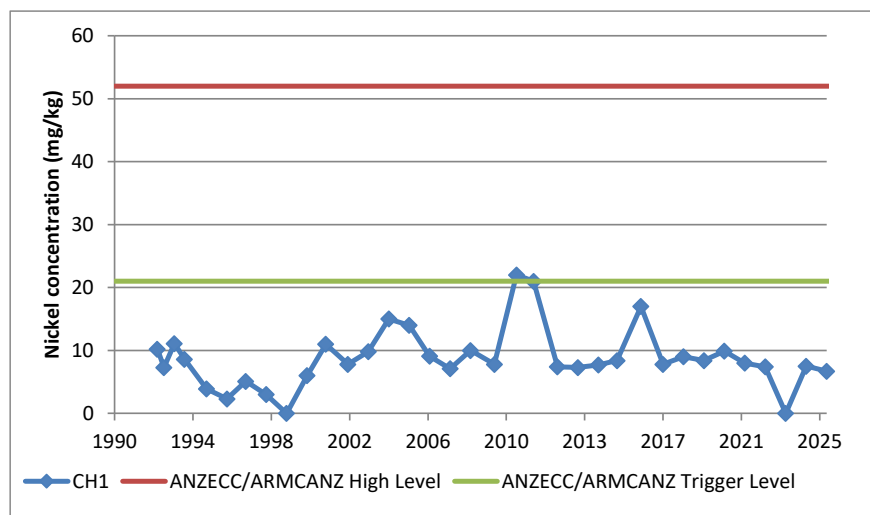
Nickel

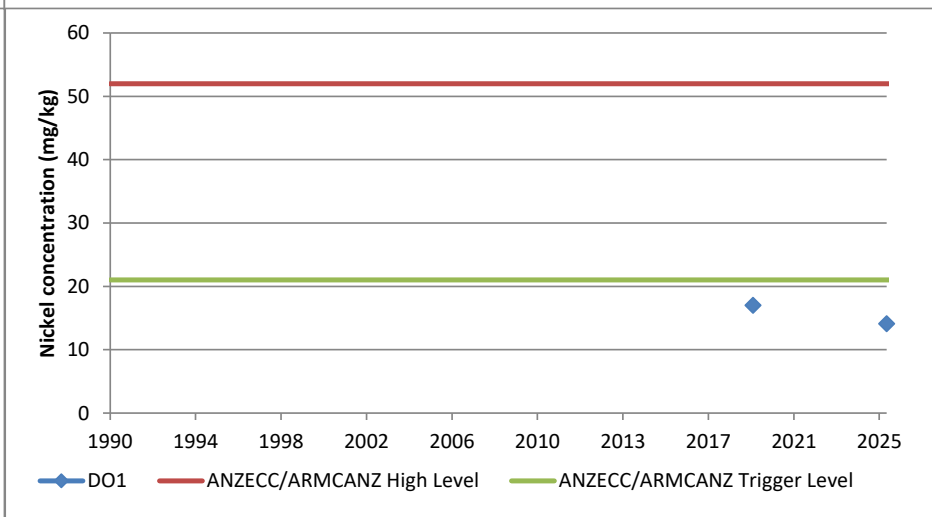
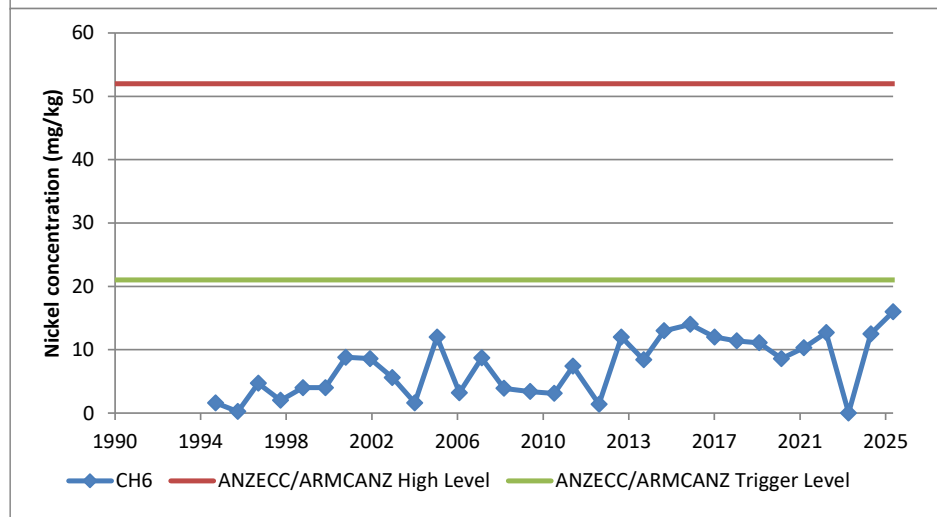
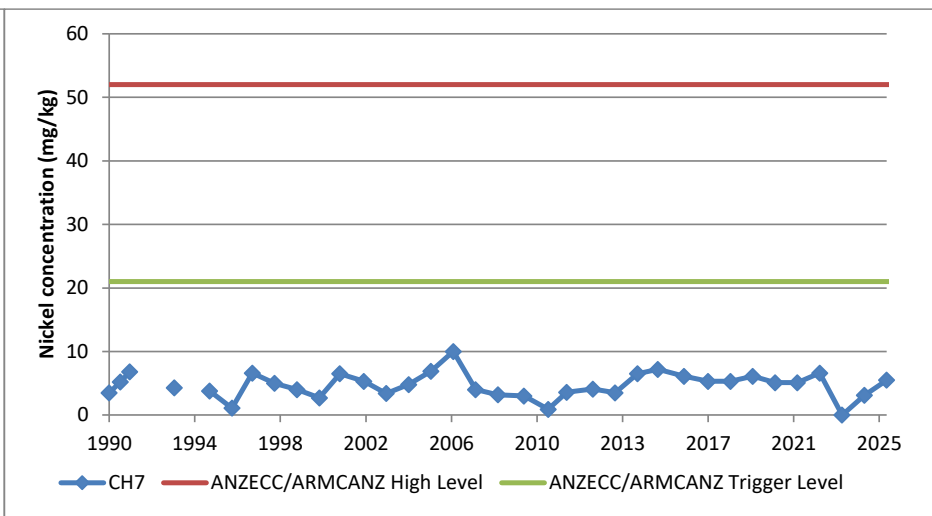
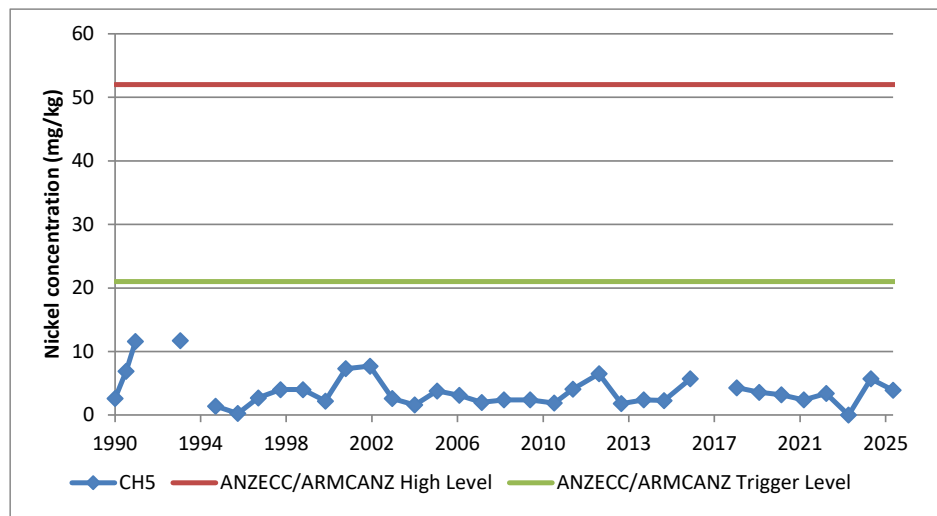
Nickel (mg/kg dry weight)																																									
With Duplicates	SITE	Dec-90	Jun-91	Nov-91	Jun-92	Jan-93	May-93	Nov-93	May-94	Jun-95	Jun-96	May-97	May-98	May-99	May-00	Apr-01	May-02	May-03	May-04	May-05	May-06	May-07	May-08	Jul-09	Aug-10	Jun-11	Aug-12	Aug-13	Aug-14	Jul-15	Sept-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25	
	CH1	NA	NA	NA	NA	10.2	7.3	11.1	8.6	3.9	2.3	5.1	3	6.0/7.0	6	11	7.8	9.8	15	14.0/14.0b	9.1/8.5b	7.1	10	7.8/7.1b	22/21b	21	7.4	7.3	7.7	8.4	17	7.8	9	8.4	9.9	8	7.4	7.6	7.5	6.7	
	CH1a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	15	9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CH2	NA	NA	NA	NA	8.9	13.6	20.5	8	2	0.9	8.1	3	5	4.4-4.5	4.7	7.8	5.7	26	27	18	18	22	11	16	11	9.9	15	16	17	16	20.2	19.7	16.1	14.8	20.8	17.5	16.3	15.6	16.7	
	CH2a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	11	15	17	18	15	16	19	19	16.4	15	17.9	16.6	14.9	17.5	16.2	
	CH3	NA	NA	NA	NA	NA	NA	NA	NA	5.2	3.7	5.7/6.2a	5	7	4.5	9.8	5.2	5.5	4.3	6.1	6.2/6.6b	4.3	3.5	4.4	4.4	4.1	4.8	13	5.6	5.7	6.1	6.2	6.4	6.2	7.4	5.9	6.2	7.6	7.5	6.1	
	CH4	NA	NA	NA	NA	NA	NA	NA	NA	2.4	1.1	24	6.0-8.0	12	5.7	10	6.7	4.3	2.4	7.7	4.4	2.8	3.6/4.1b	3.4	5.7	6.8	1.1	2.9	4.3	7.7	5.3	6.5	1.6	5.1	6.2	6.1	5.7	8.4	5.2	4.4	
	CH5	2.6	6.9	11.6	NA	NA	NA	11.7	NA	1.4	0.25	2.7	4	4.0-5.0	2.2-2.9	7.3	7.7	2.6	1.6	3.8	3.1	2	2.4	2.4	1.9	4.1	6.5	1.8	2.4	2.3	5.7	Refusal	4.3	3.6	3.2	2.4	3.4	2.6	5.7	3.9	
	CH5a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.7	7.1/7.2b	2.5	1.5/1.7b	3.7	NA	NA	NA	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CH6	NA	NA	NA	NA	NA	NA	NA	NA	1.6	0.25	4.7	2	4	4	8.8	8.6	5.6	1.6	12	3.2	8.7	3.9	3.4	3.1	7.4	1.4	12	8.4	13	14	12	11.4	11.1	8.6	10.3	12.7	4.7	12.5	16	
	CH7	3.5	5.2	6.8	NA	NA	NA	4.3	NA	3.8	1.1	6.6	5	4.0-5.0	2.7	6.5	5.3	3.4	4.8	6.9	10	4	3.2	3	0.9	3.6	4.1	3.5	6.5	7.2	6.1	5.3	5.3	6.1	5.1	5.1	6.6	6.5	3.1	5.5	
	CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	S81	NA	23.1	29.8	36.7	41.9	15.6	23.8	17.3	37	5.1	16	10	18	15.0/15.0b	20.0/21.0b	16.9	17	14	29	22	18	10	13	21	21	9.1	18	17	17	19	17.4	19.7	15.0	19.4	18.1	15	17.5	19.2	19.8	
	S81a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	17	NA	21	20	13	12	21	14	NA	17	20	17	19	17.8	15	17.0	13.9	18.8	18.3	17.3	18.8	20.8	
	S82	NA	28.2	30.6	32.5	27	21.1	26	36.3	42	9.8	16	18	21	17	24	14.5	17	22	27	23	22	42	11	19	18	NA	NA	NA	15	17	16.9	19.1	17.8	17.8	16.5	17.9	14.3	16.1	13.7	
	S83	NA	26.1	22.5	19.6	9.8	4.2	9	8	18	2.1	8.7	3	4	11	4.6	6.4/6.5a	5.8	21	19	4.4	4	4.1	9.6	16	19	NA	NA	NA	18	19	23.3	27.2	19.8	23.3	23.9	21.1	20.8	12.8	15	
	S84	NA	13.2	18.1	21.9	11.1	10.1	12.4	10.7	17	4.5	6.4	7	9	6.7	9.5	8	9.5	13	15	8.1	8.3	8.1	7.4	9.9	7.1	NA	NA	NA	8.8	9.7	11.4	8.6	8.2	9	17.4	9.8	12.8	17.3	14.3	
	S85	NA	7.9	16	16.6	11.9	10.6	12.8	13.8	23	4.1	7.8	6	8	6.4	9.8	8.1	7.3	10	12	9.9	9.4	9.1	6.3	5.1	7.7	NA	NA	NA	8.8	9.1	11	9.4	8.4	8.7	19.0	12.9	14.6	15.1	16.1	
	S812	NA	NA	NA	NA	21.5	NA	26.5	20.6	35	12	14	13	25	16	18	15.7	12.0/14.0b	20	23	21	16	15	15	17	13	14	14	17	17	19	Refusal	Refusal	Refusal	15.9	NA	NA	13	16.1	20.5	
	S812a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.0/16.0b	NA	NA	NA	NA	10	NA	NA	NA	NA	Refusal	Refusal	Refusal	NA	NA	NA	NA	NA	NA	
	D01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.0	NA	NA	NA	NA	NA	14.1	
	D02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1	NA	NA	NA	NA	NA	16.7	
	D03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Refusal	NA	NA	NA	NA	NA	17.5	
	D04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.3	NA	NA	NA	NA	NA	15.2	
	D04a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.4	NA	NA	NA	NA	NA	14.6	
	D05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.7	NA	NA	NA	NA	NA	15	
	D06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.7	NA	NA	NA	NA	NA	11.9	
	D07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.0	NA	NA	NA	NA	NA	10.2	
	D07a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.8	NA	NA	NA	NA	NA	11.5	

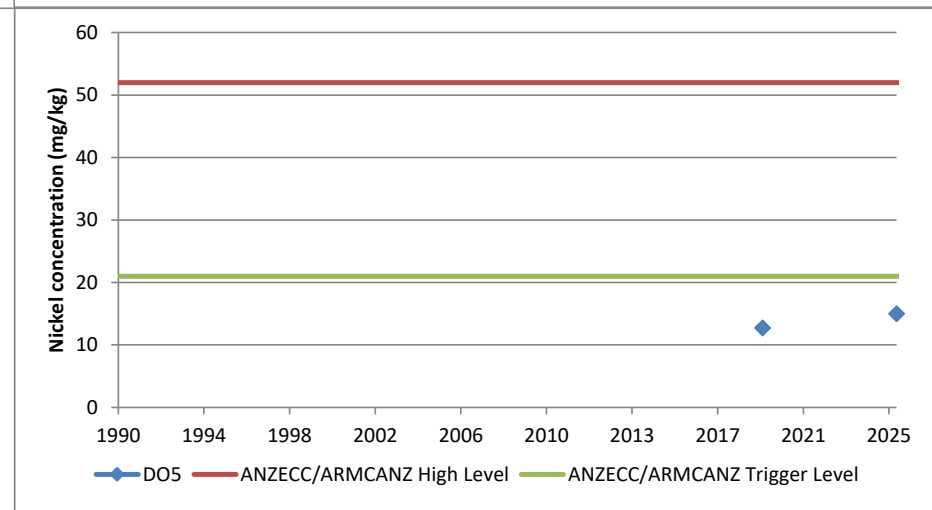
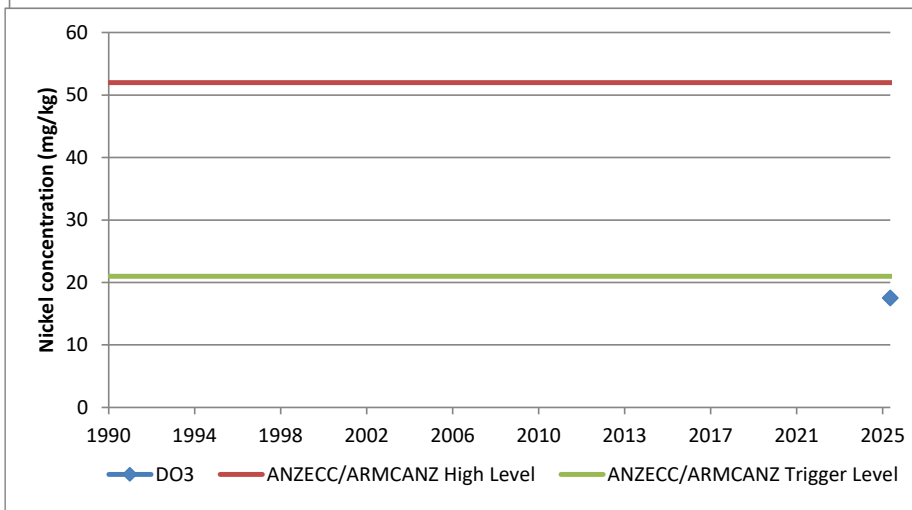
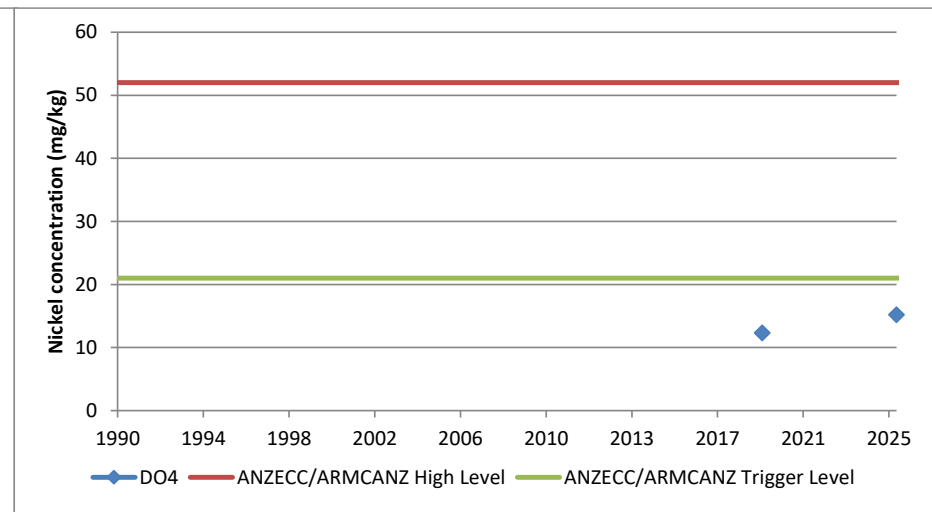
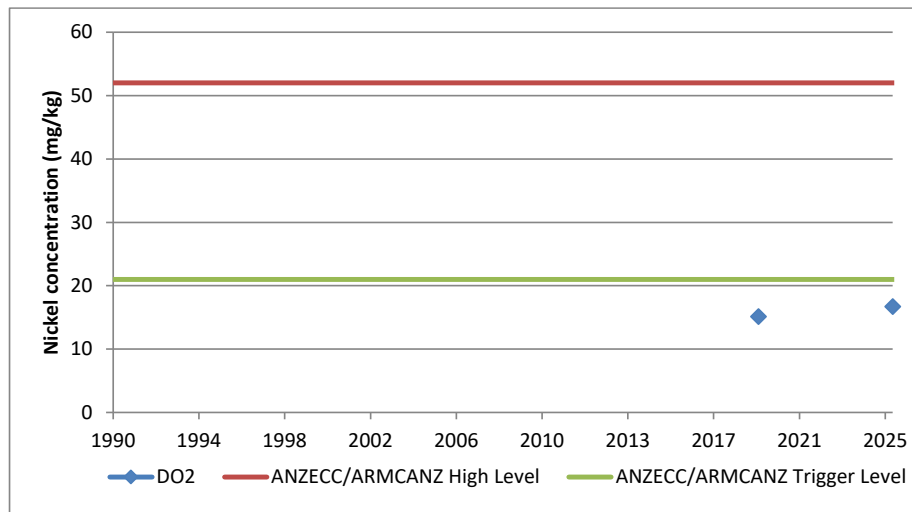
Note where <LOR half LOR is reported

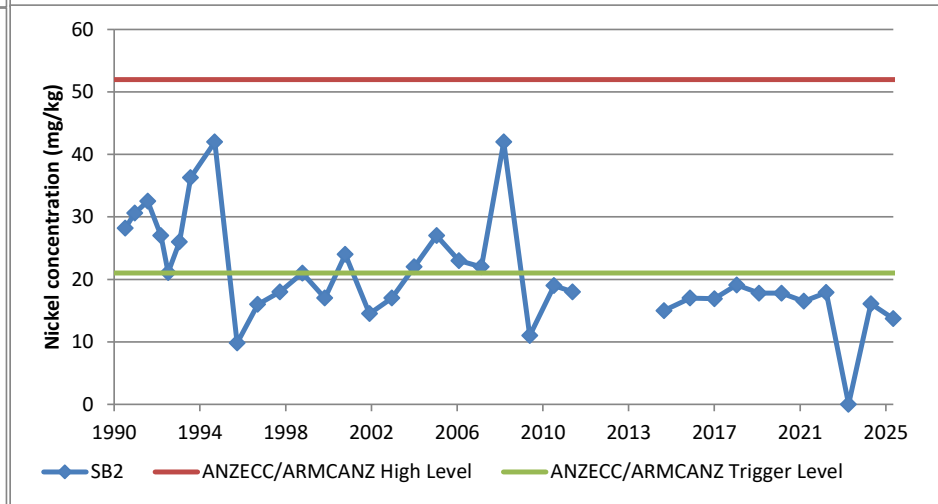
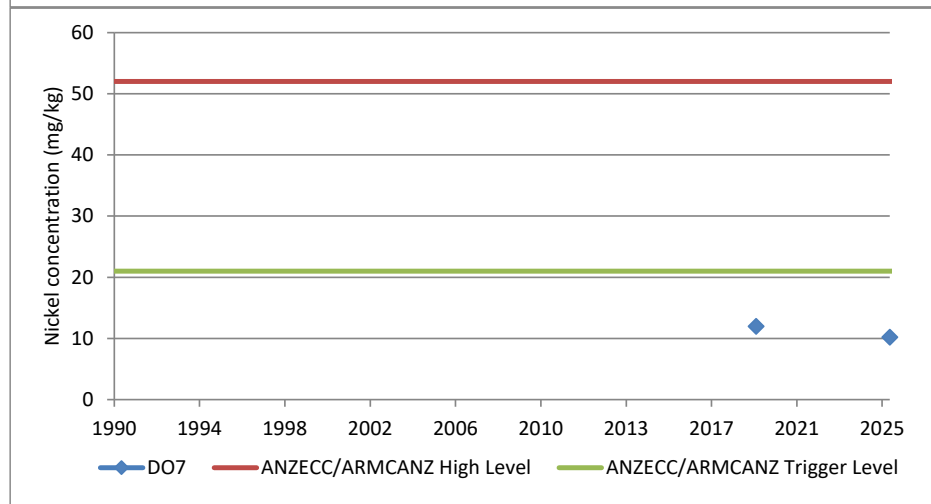
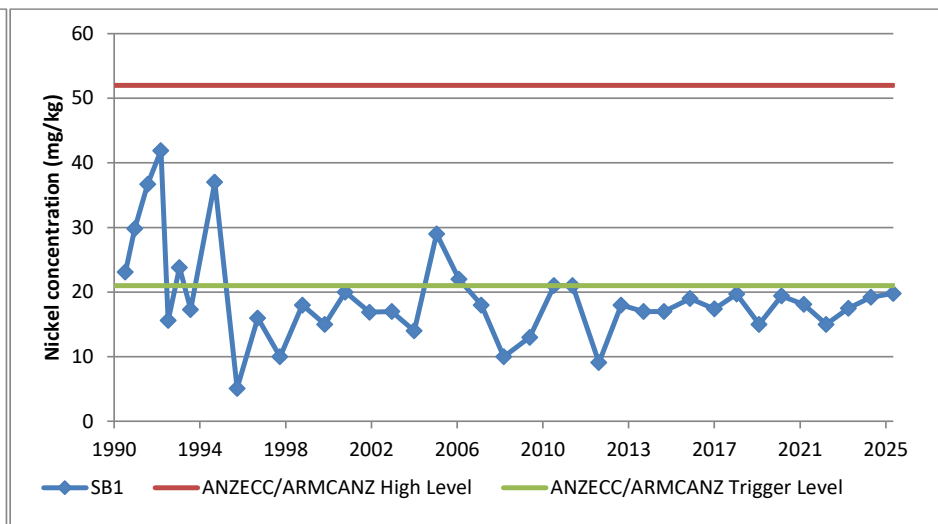
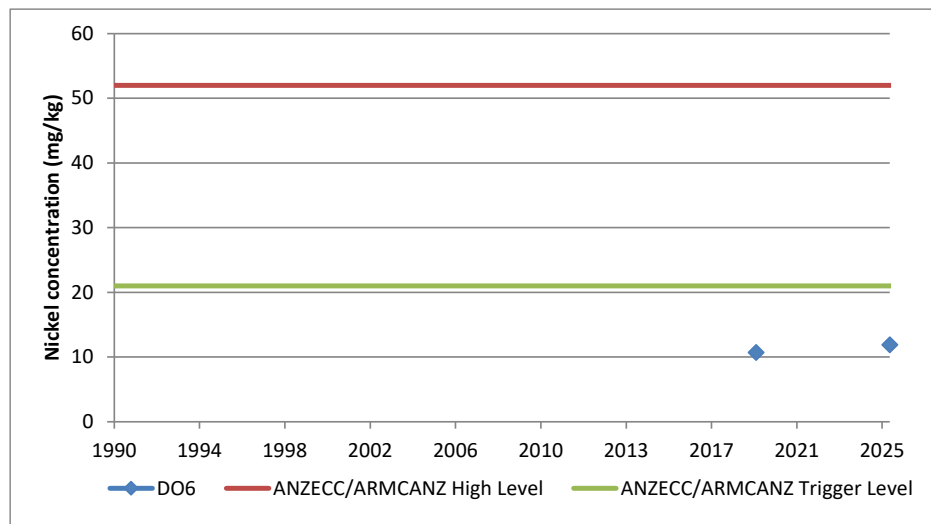
Exceedance of Guidelines

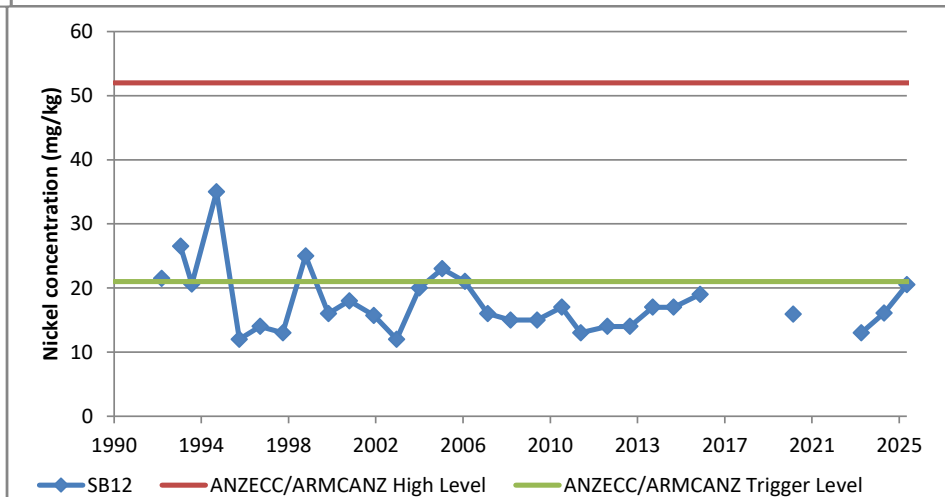
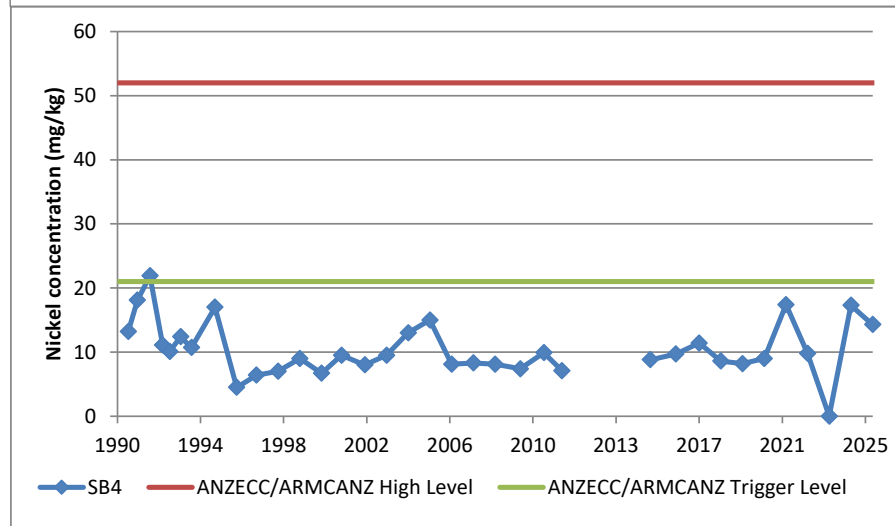
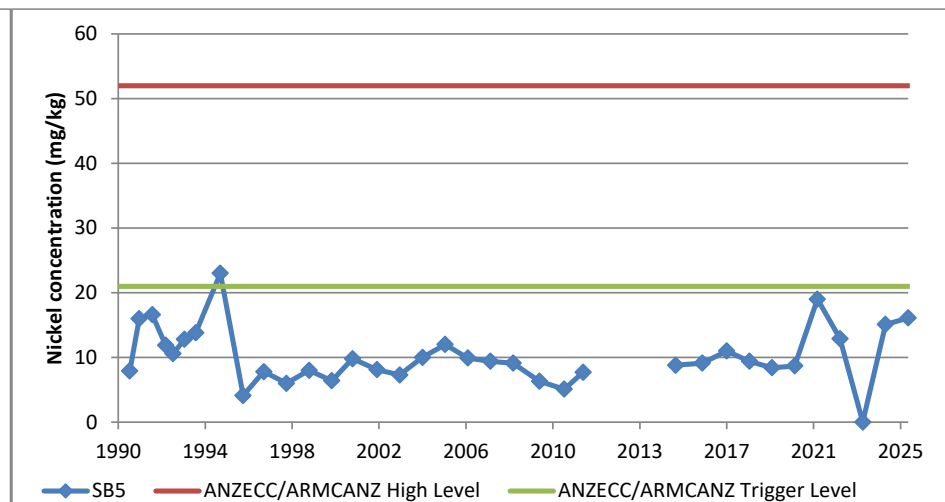
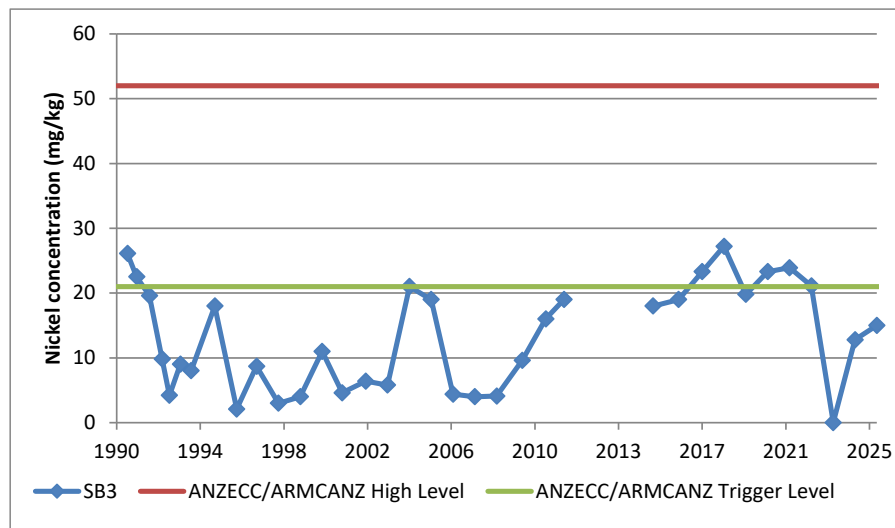
ANZECC/ARMCANZ Trigger Level	21
ANZECC/ARMCANZ High Level	52











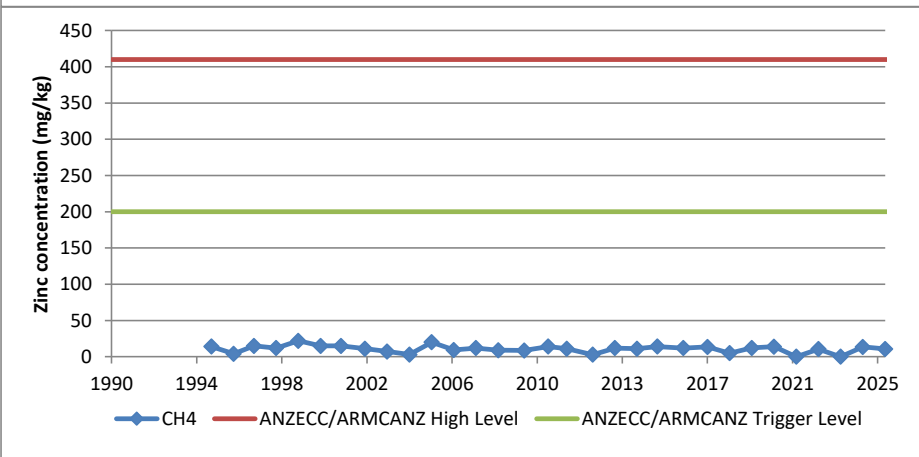
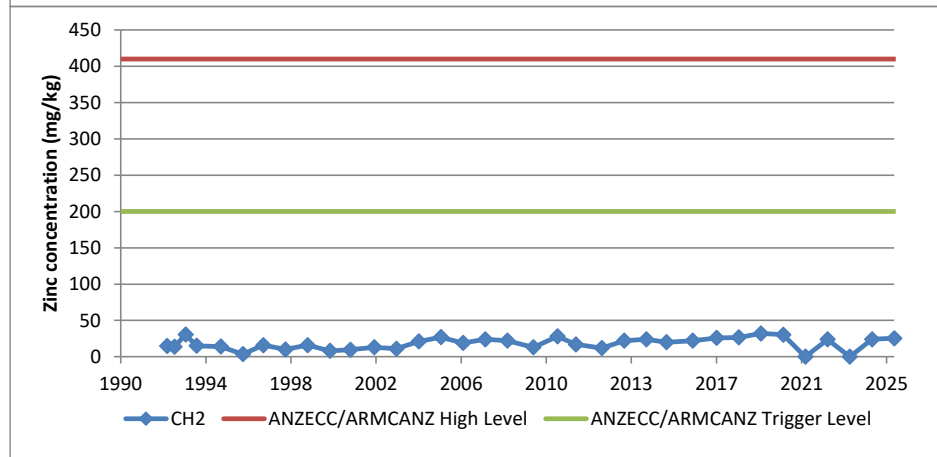
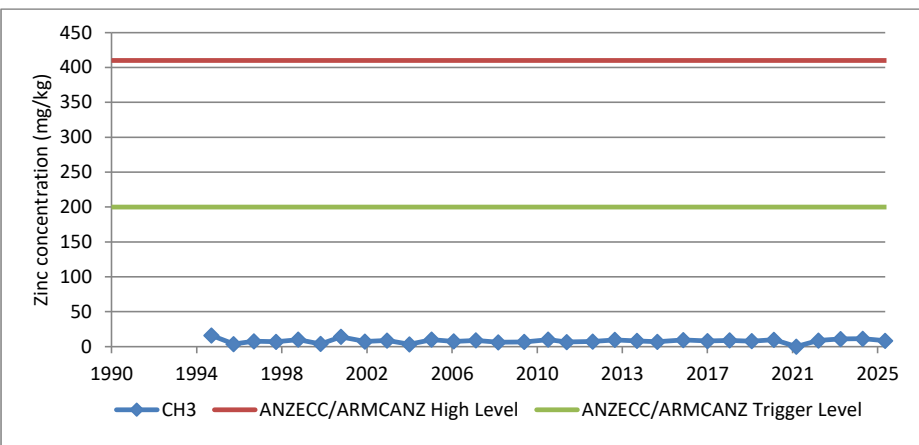
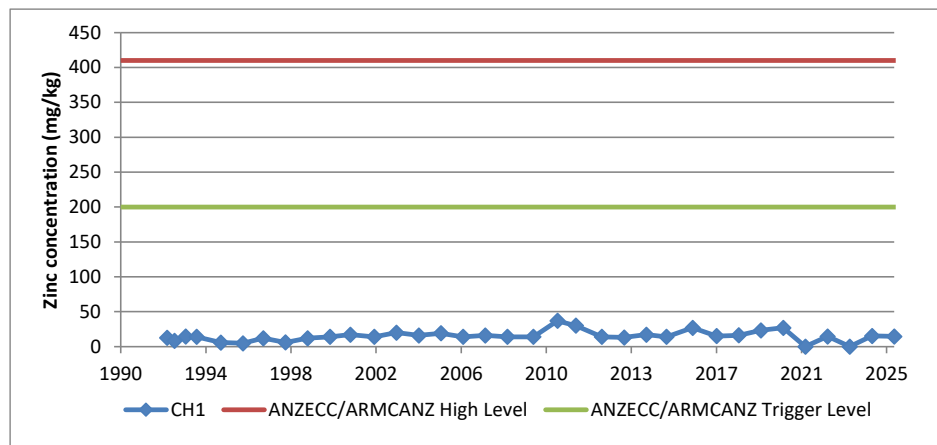
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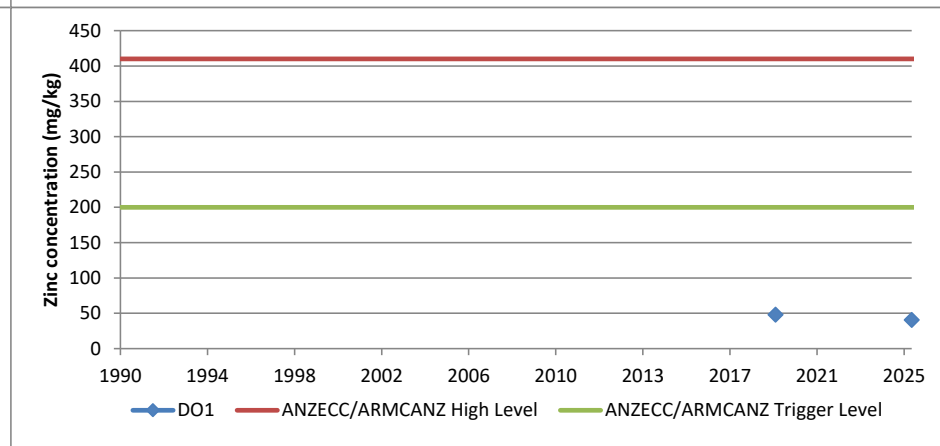
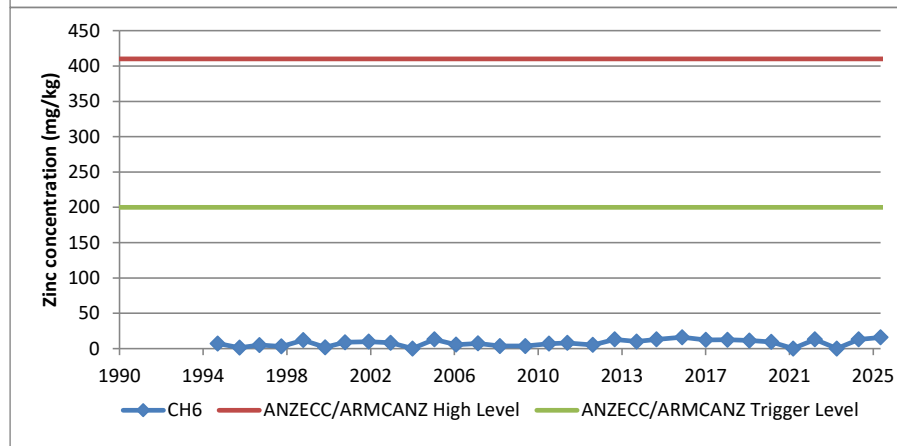
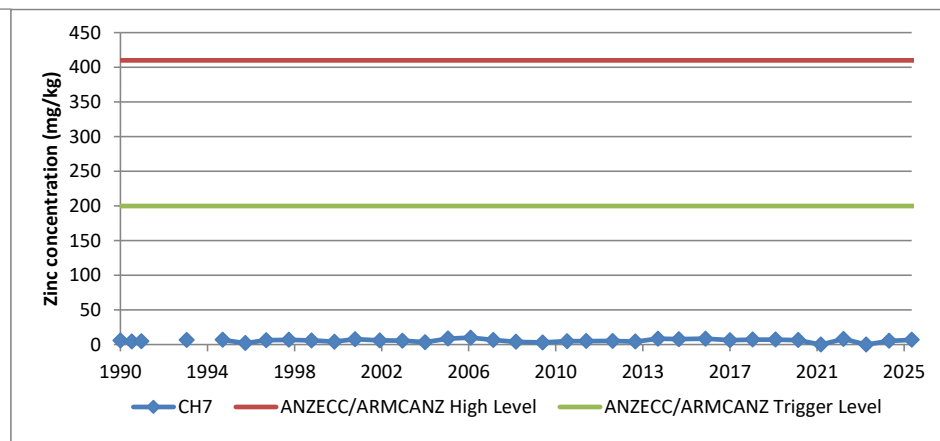
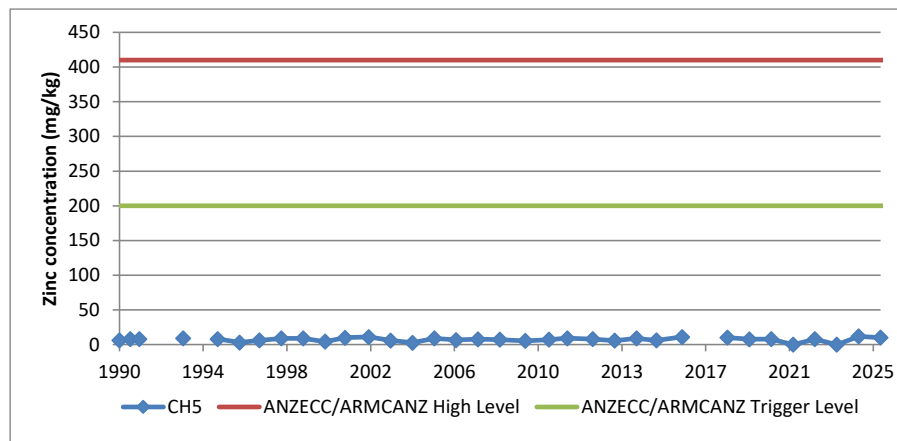
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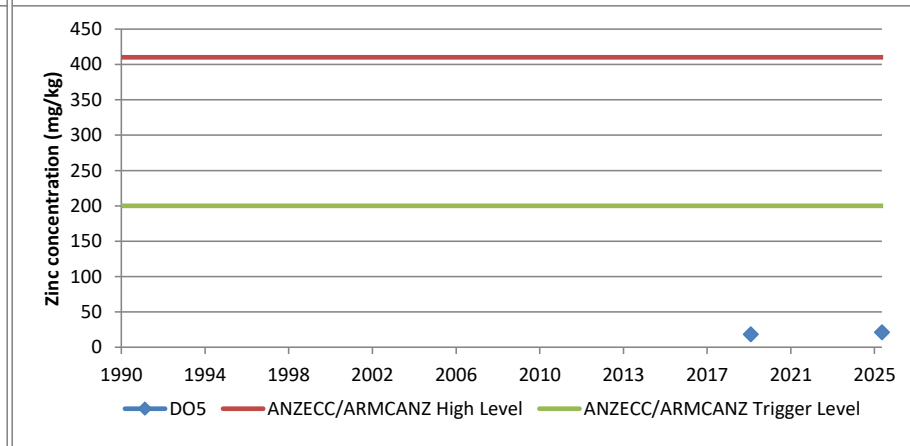
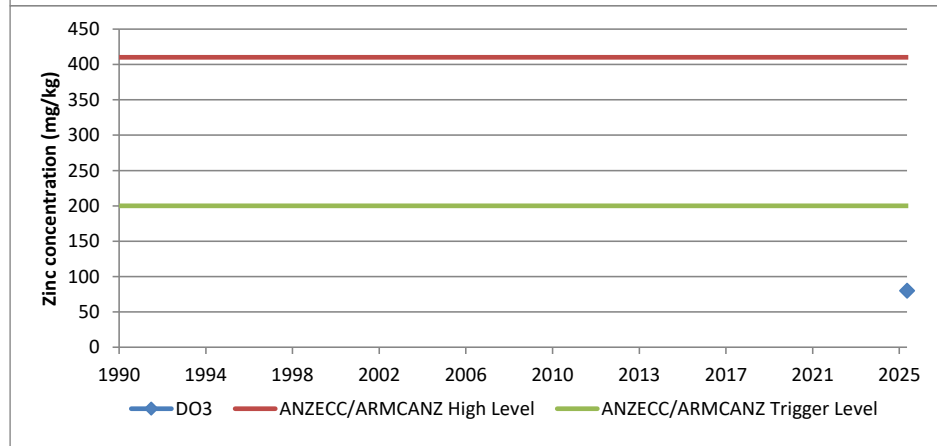
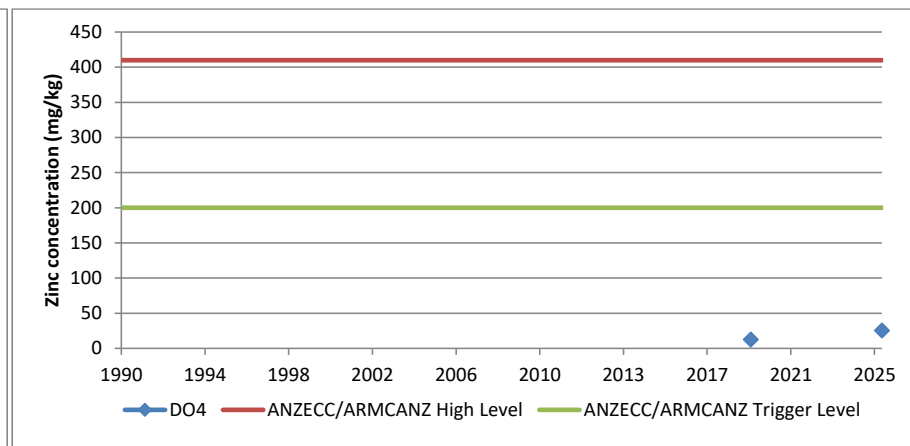
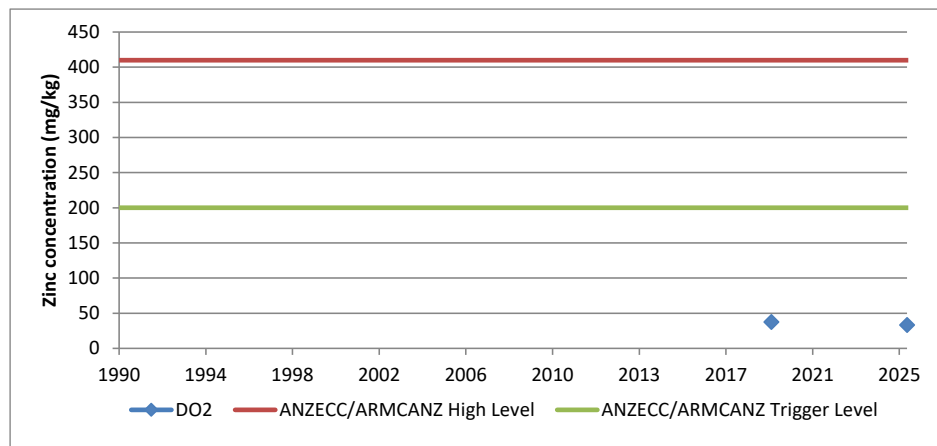
Note where <LOR half LOR is reported

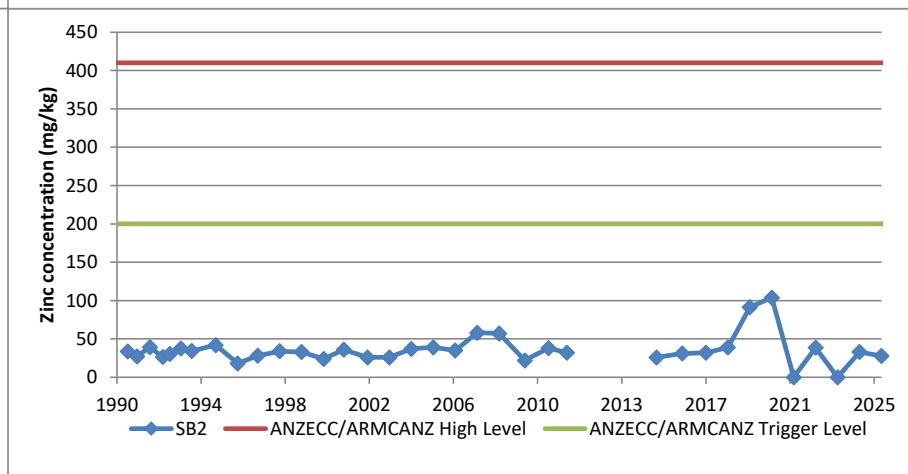
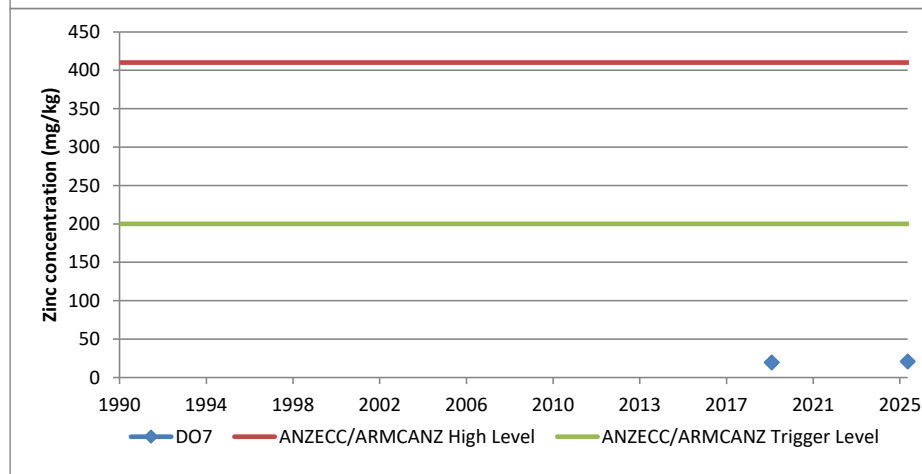
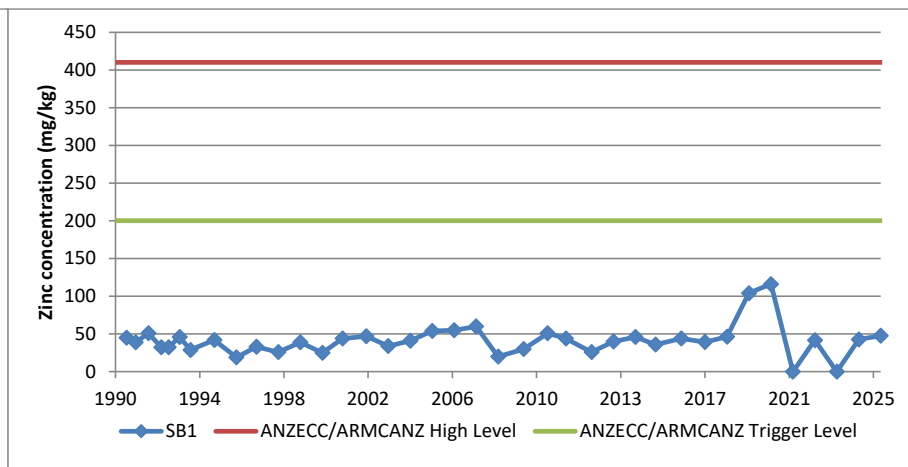
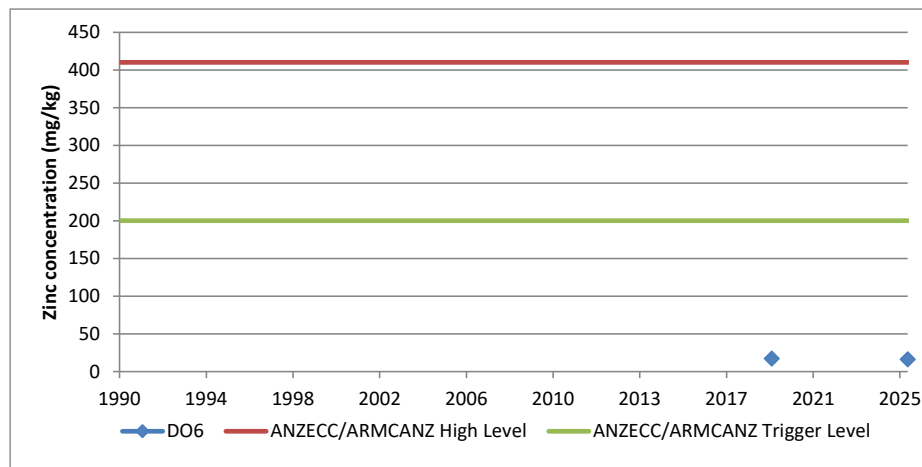
Exceedance of Guidelines

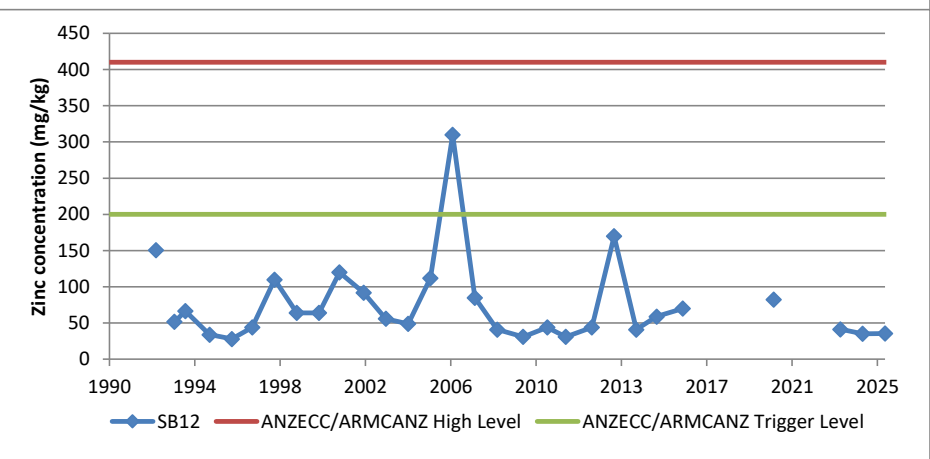
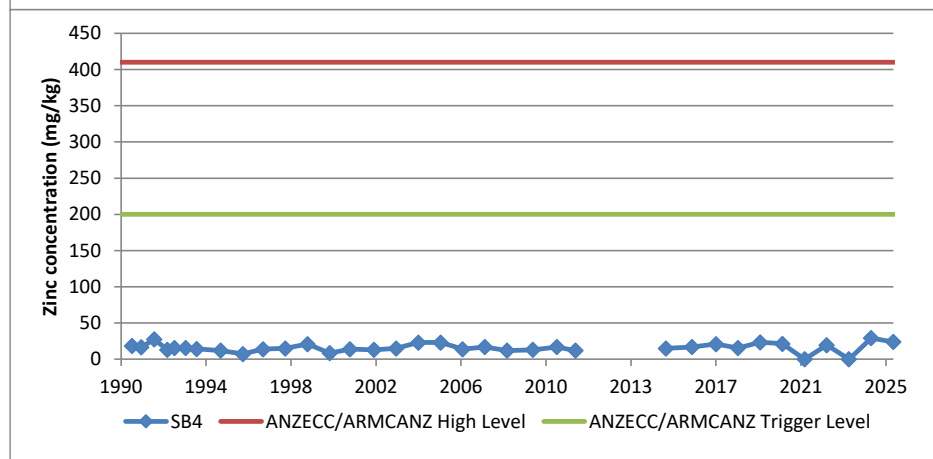
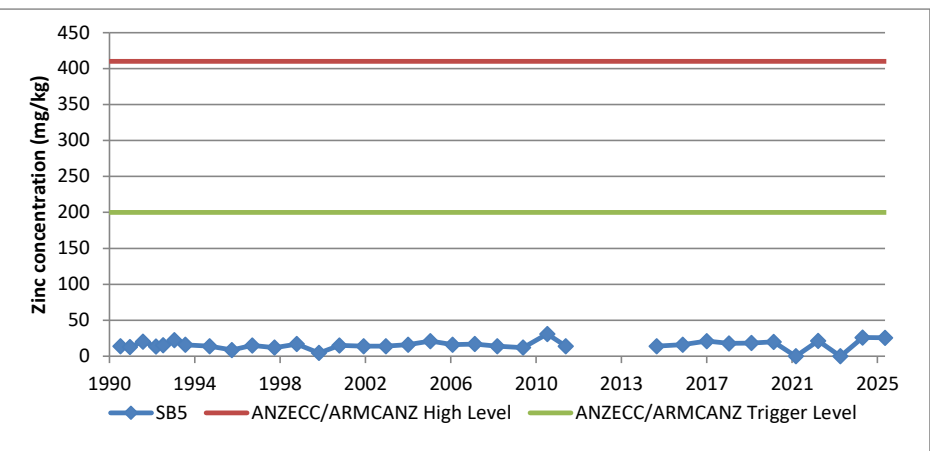
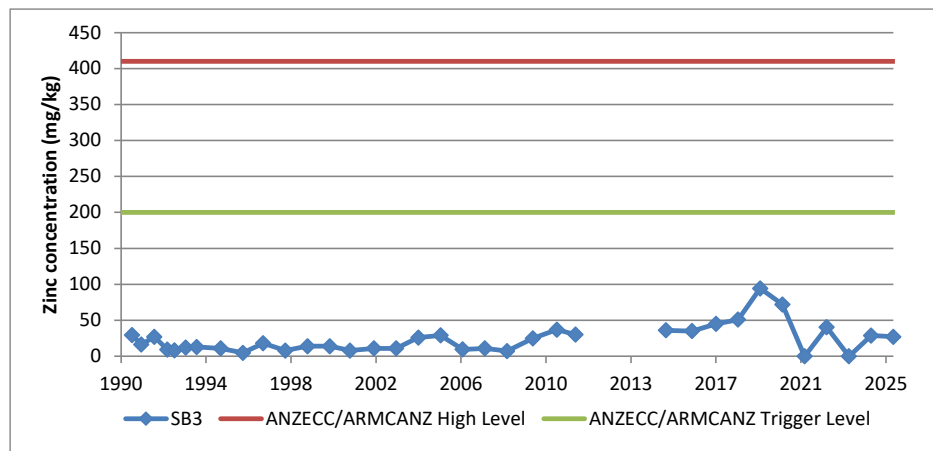
ANZECC/ARMCANZ Trigger Level	200
ANZECC/ARMCANZ High Level	410











TPH

TPH (mg/kg dry weight)																	
Site	Jul-90	Dec-90	Jun-91	Nov-91	Nov-93	Aug-14	Jul-15	Sept-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
CH1	NA	NA	NA	NA	NA	a<100/<100	a<100/<100	<100	<3	<3	<3	<3	25	79	6	14	<3
CH2	NA	NA	NA	NA	NA	<100	<100	a<100/<100	<3	6	11	<3	19	60	<3	100	17
CH3	NA	NA	NA	NA	NA	<100	<100	<100	8	4	7	8	163	65	6	16	13
CH4	NA	NA	NA	NA	NA	<100	<100	<100	<3	<3	4	<3	70	50	9	16	<3
CH5	204	120	1,460	460	~100	<100	<100	<100	Refusal	7	3	<3	154	83	24	16	10
CH6	NA	NA	NA	NA	NA	<100	<100	<100	3	<3	4	<3	125	50	22	8	31
CH7	104	104	104	104	104	<100	<100	<100	3	6	<3	4	76	120	11	23	27
SB1	NA	NA	NA	NA	NA	NA	100	NA	NA	NA	NA	NA	79	49	34	6	NA
SB2	NA	NA	NA	NA	NA	NA	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB3	NA	NA	NA	NA	NA	NA	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB4	NA	NA	NA	NA	NA	NA	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB5	NA	NA	NA	NA	NA	NA	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB12	NA	NA	NA	NA	NA	NA	230	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA
DO1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	49
DO2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	16
DO3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Refusal	NA	NA	NA	NA	NA	33
DO4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	27
DO5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	<3
DO6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	<3
DO7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	<3

Appendix B. Intertidal sediments data and graphs

APPENDIX B- Intertidal SEDIMENTS

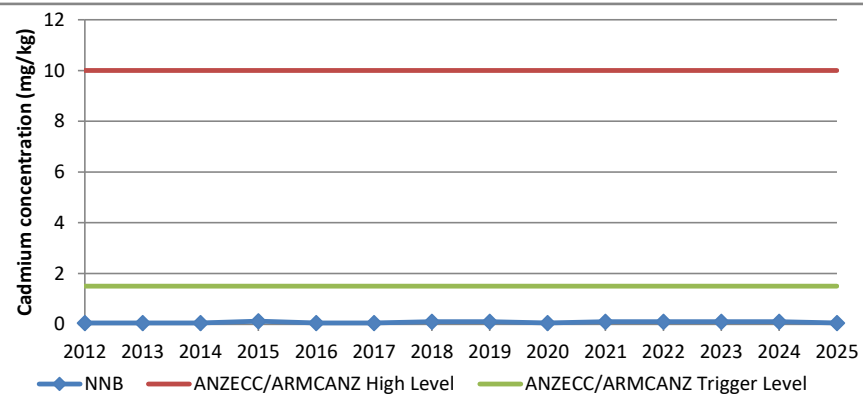
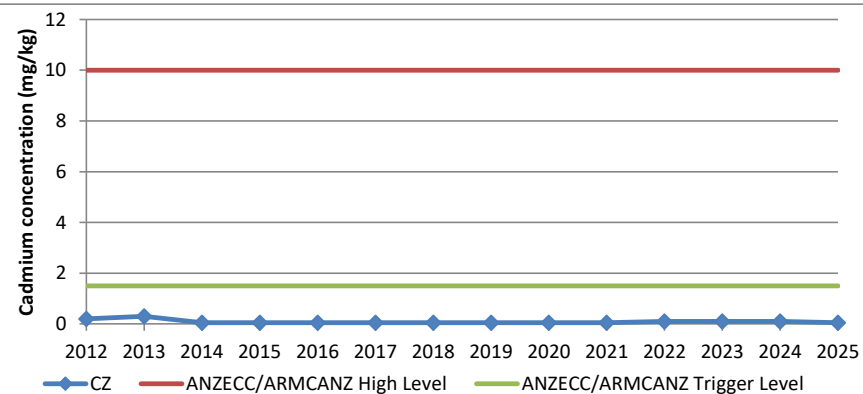
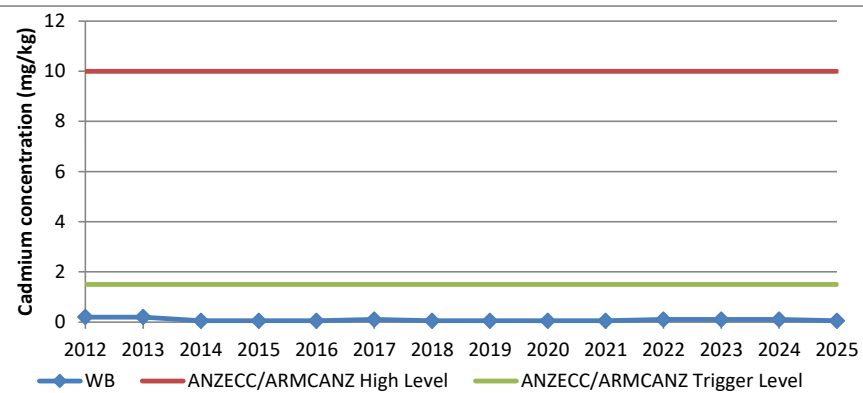
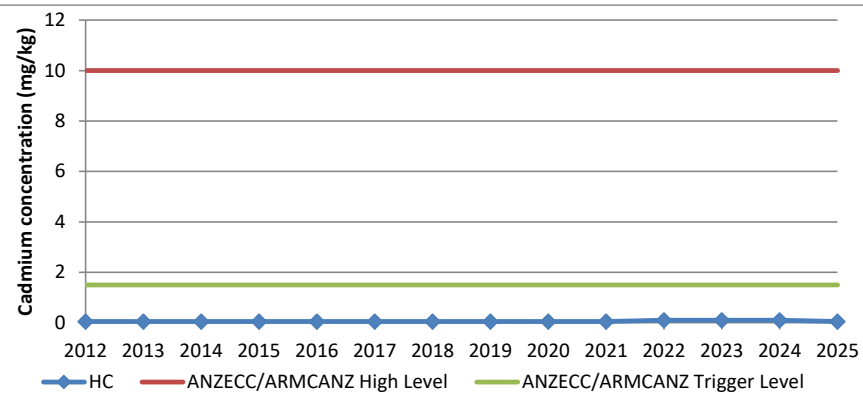
Cadmium

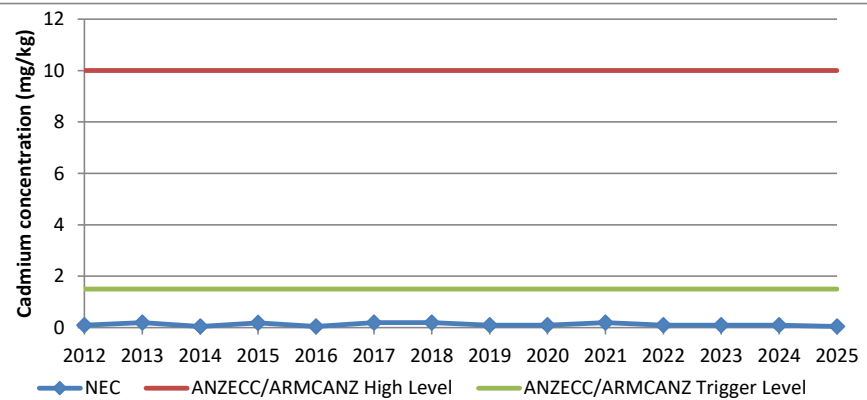
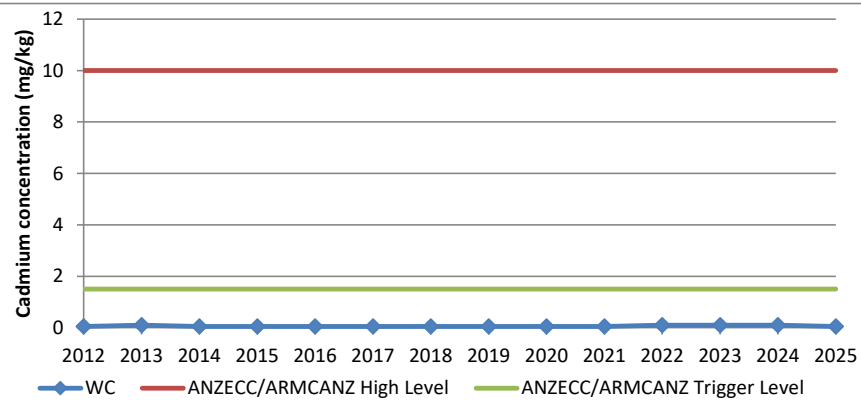
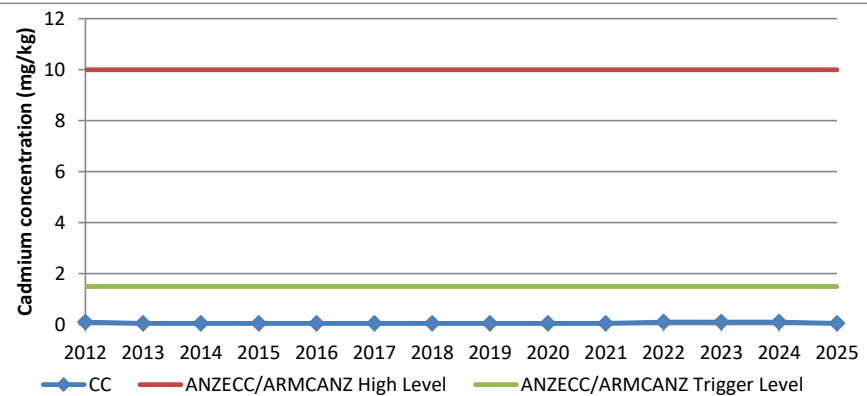
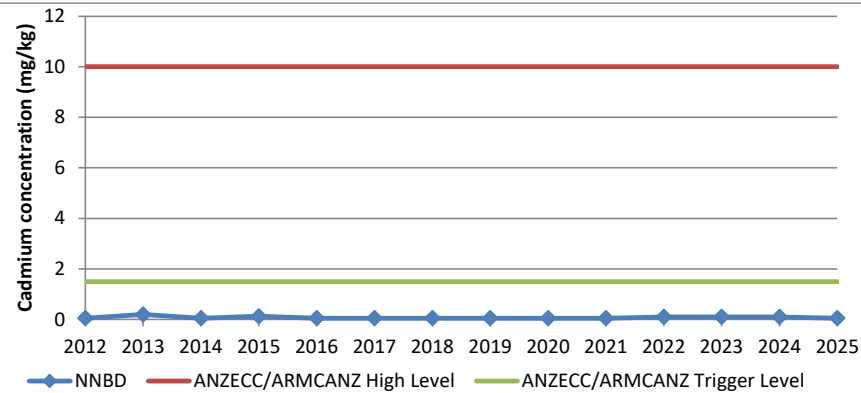
Cadmium (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
WB	0.2	0.2	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
CZ	0.2	0.3	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
NNB	0.05	0.05	0.05	0.12	0.05	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.05
NNBD	0.05	0.2	0.05	0.13	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
CC	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
WC	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
NEC	0.1	0.2	0.05	0.19	0.05	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.05
KB						0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
NB						0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05
NNBDU								0.2	0.05	0.05	0.1	0.1	0.2	0.2
SCB								0.05	0.05	0.05	0.1	0.1	0.1	0.05

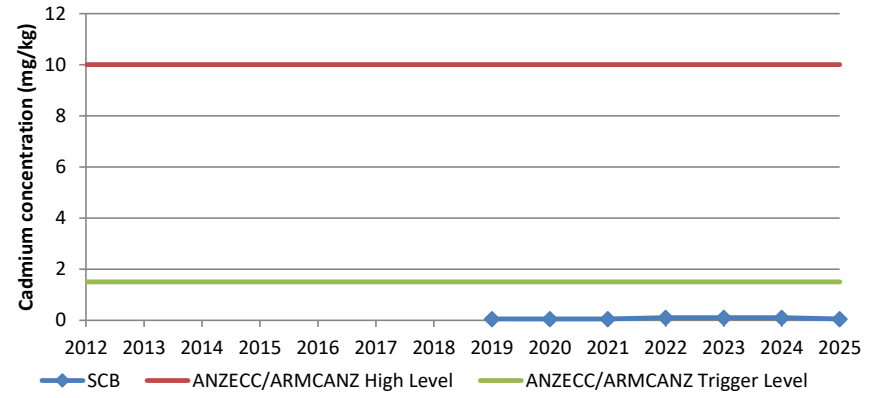
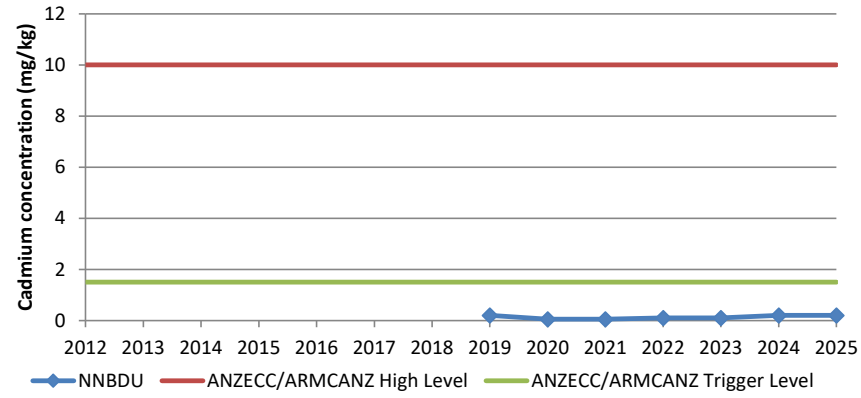
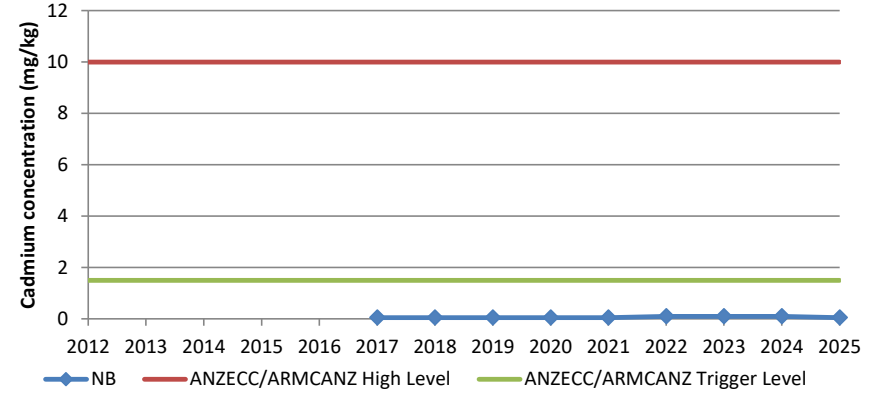
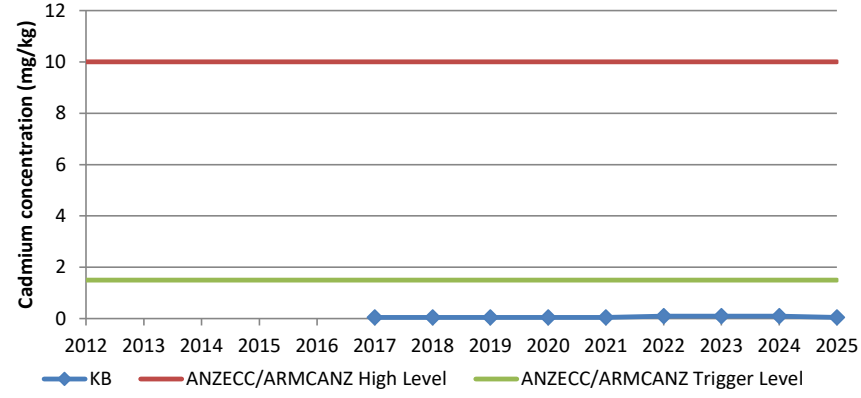
Note where <LOR half LOR is reported

Guideline Exceedences

ANZECC/ARMCANZ Trigger Level	1.5
ANZECC/ARMCANZ High Level	10





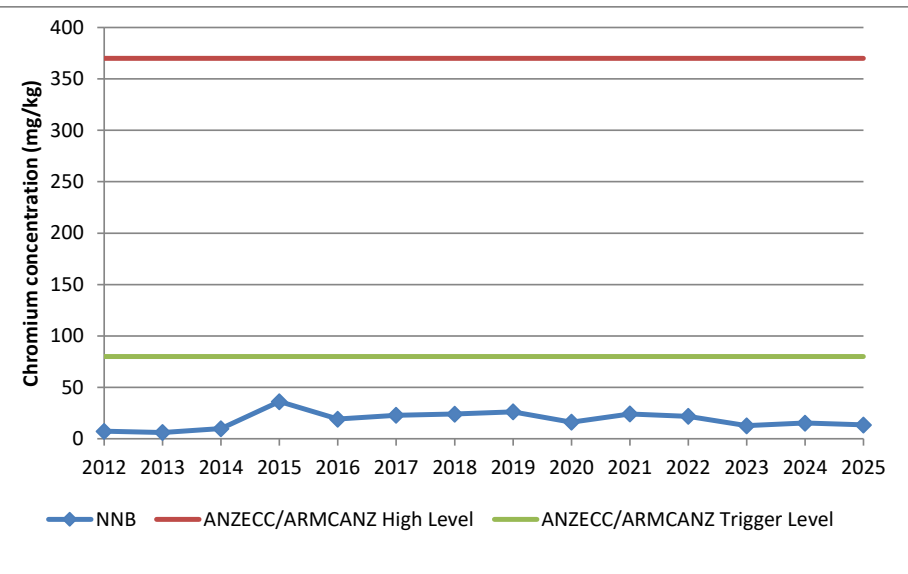
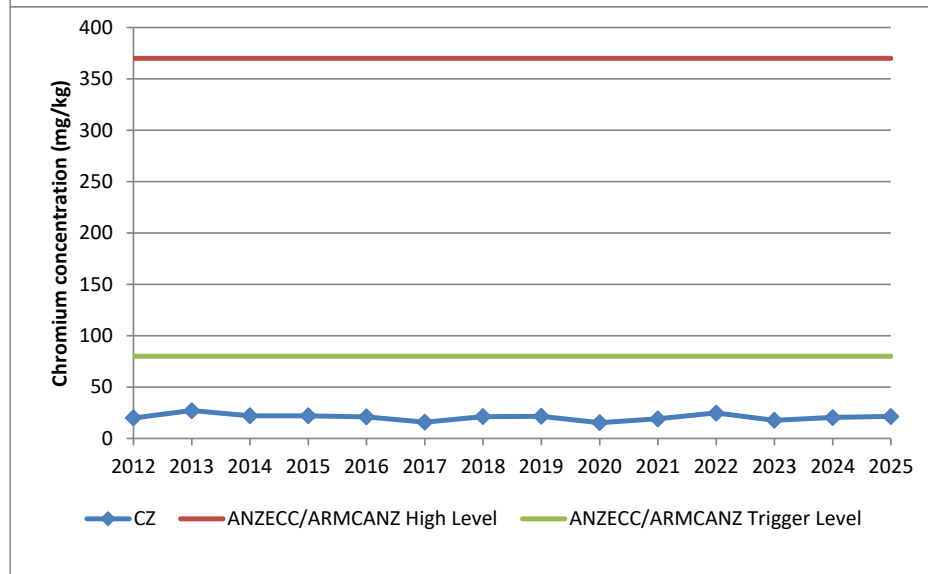
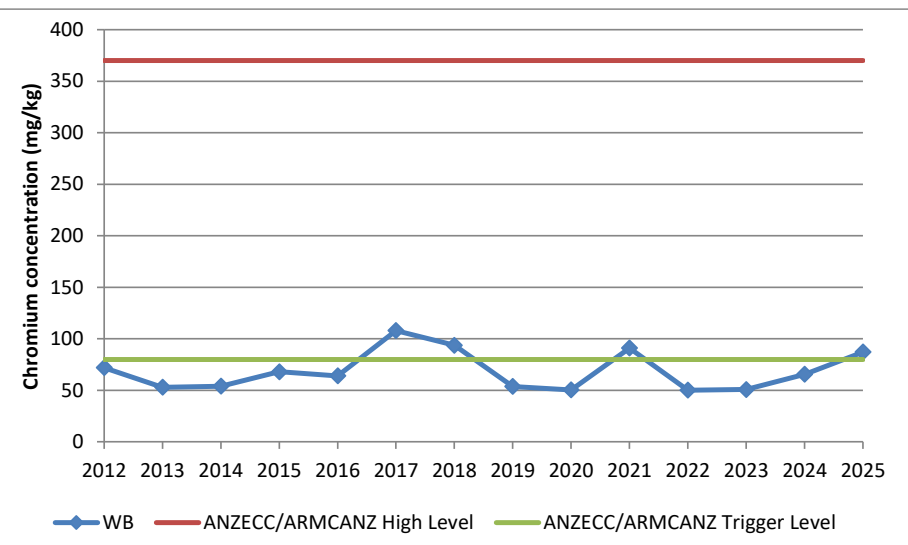
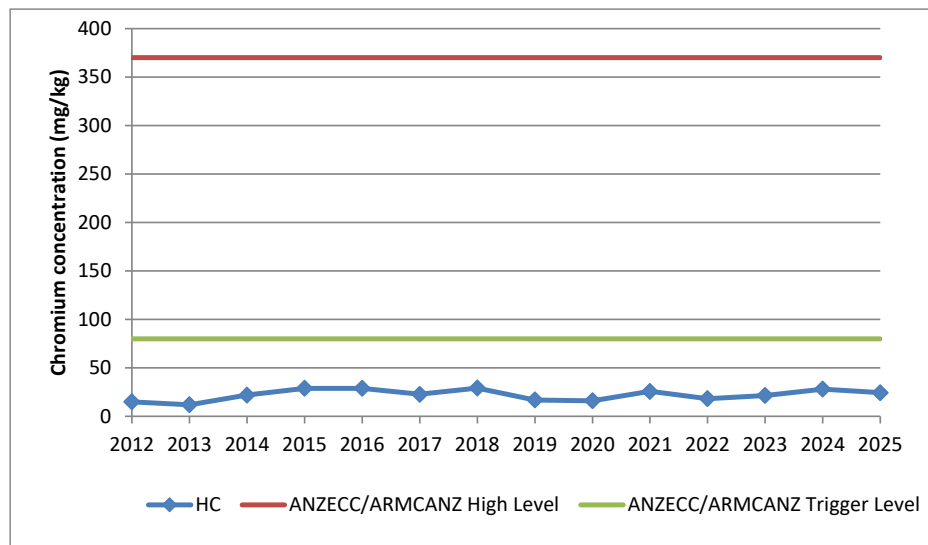


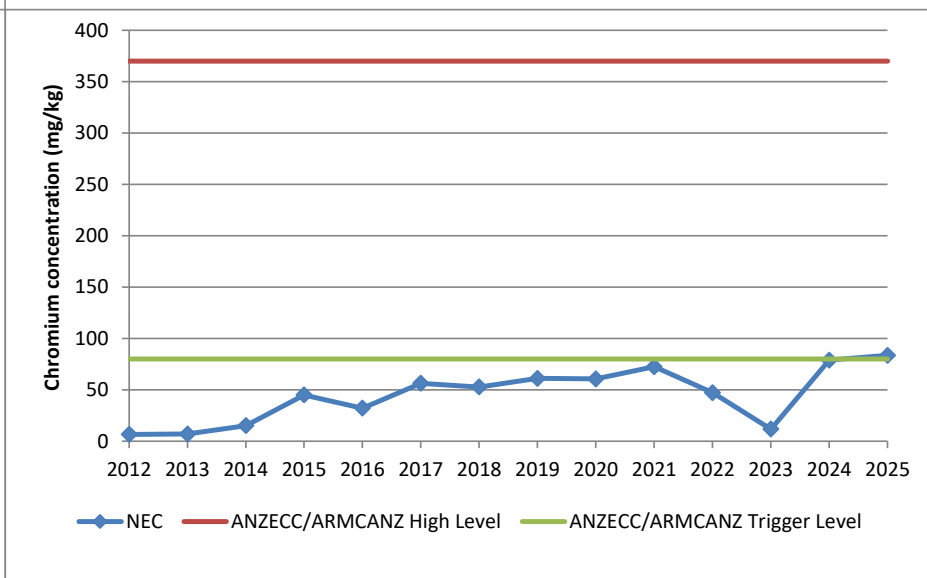
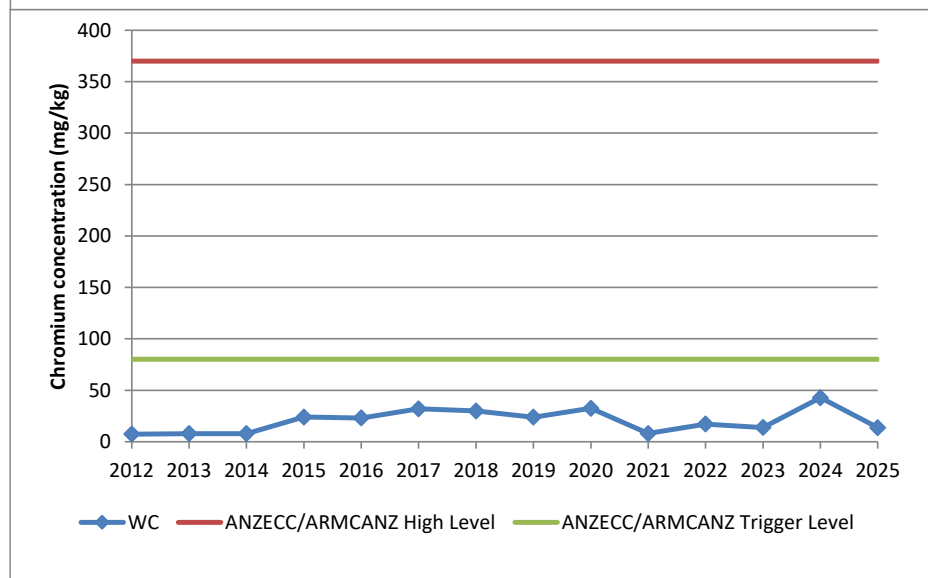
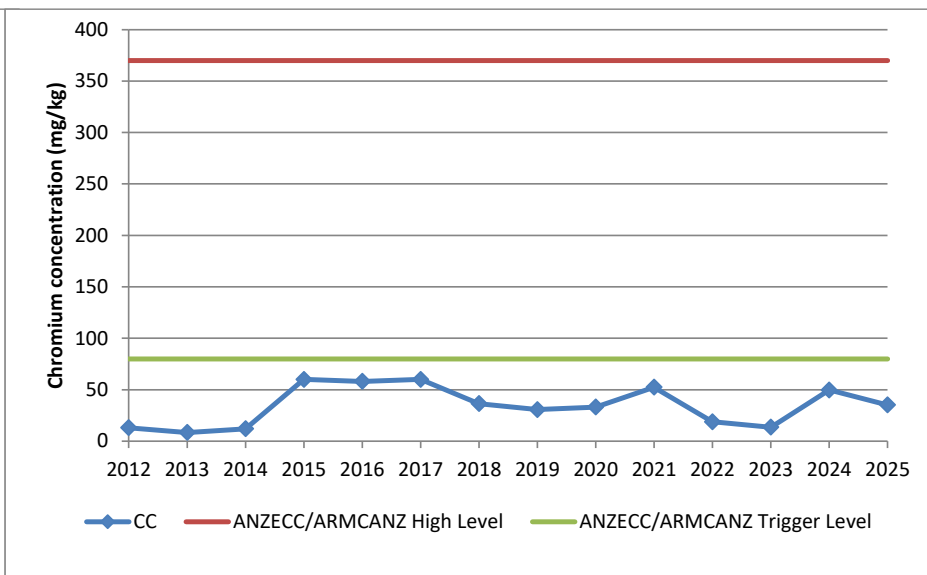
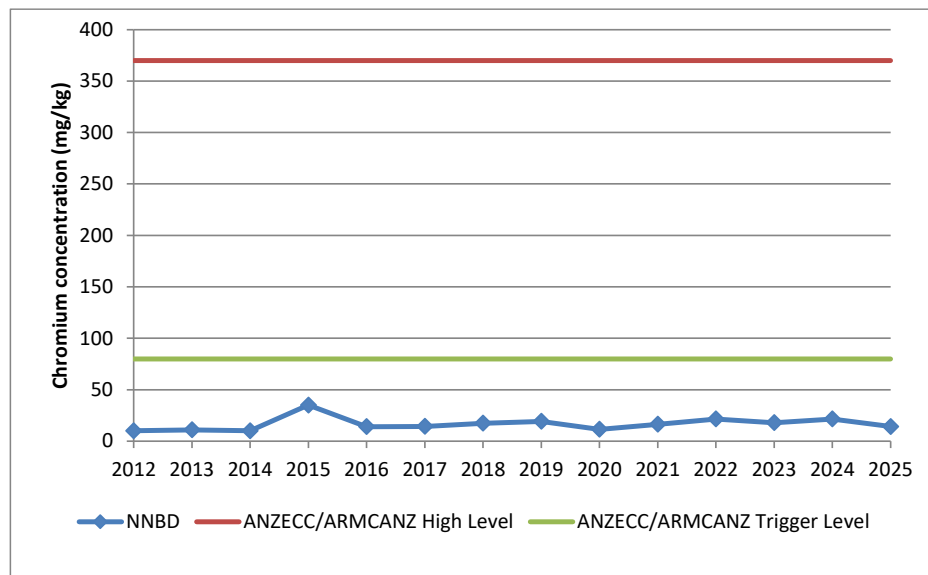
Chromium

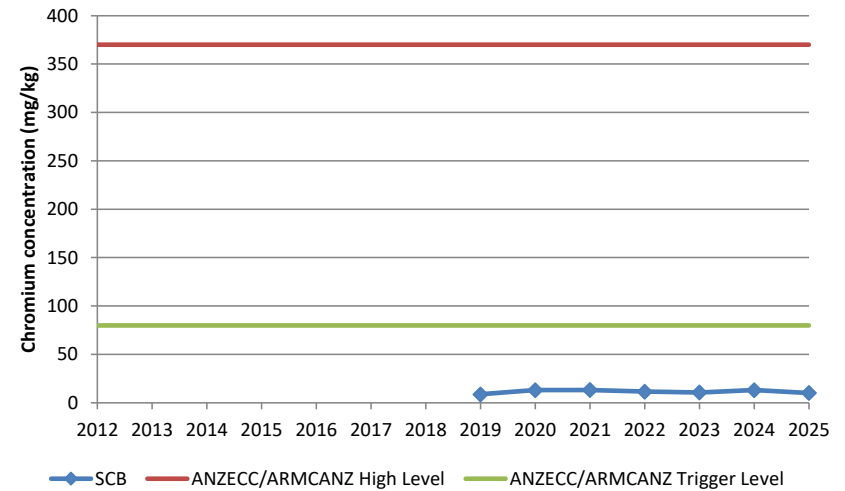
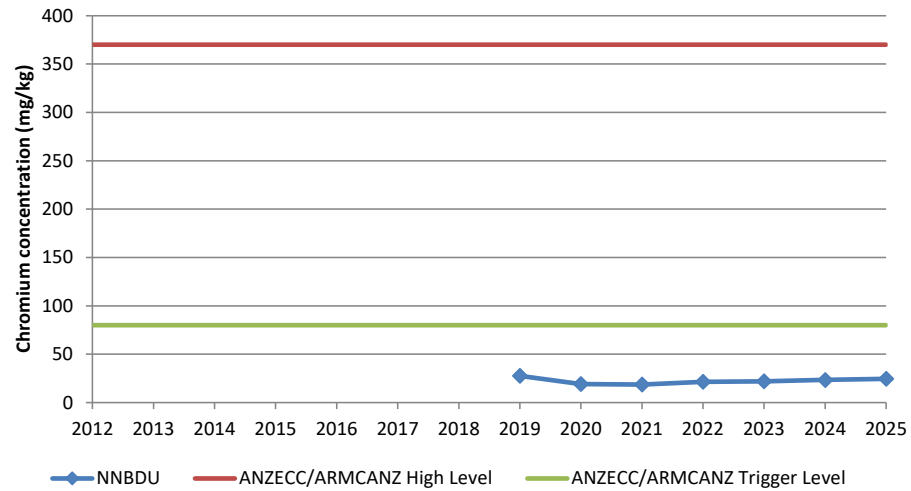
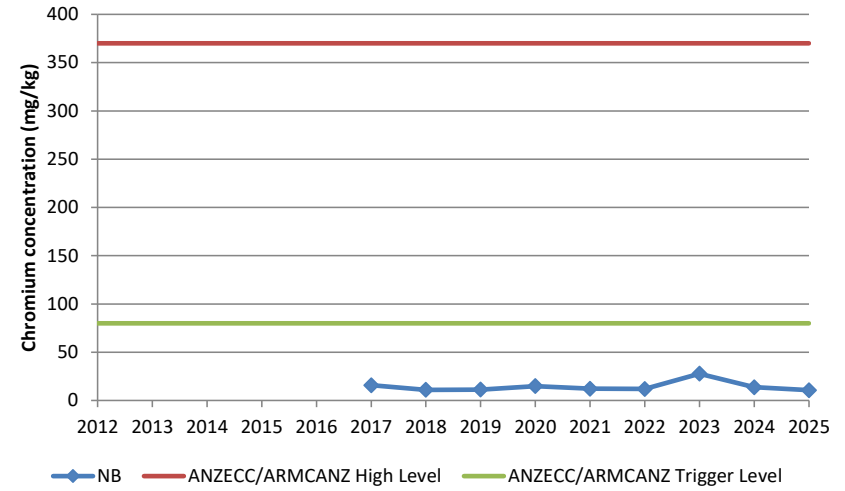
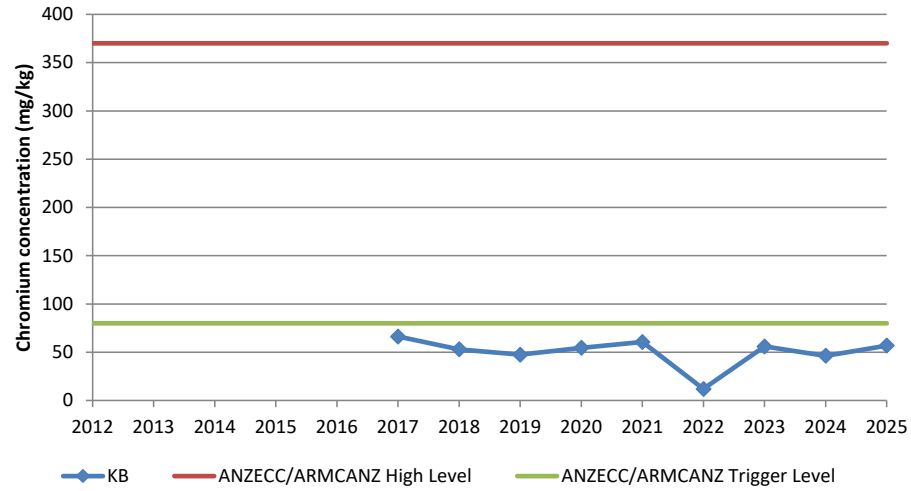
Chromium (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	15	12	22	29	29	22.8	29.2	17	16.1	25.8	18.3	21.6	28.2	24.4
WB	72	53	54	68	64	108	93.7	53.8	50.4	91	50.1	50.8	65.6	87.1
CZ	20	27	22	22	21	15.9	21.2	21.5	15.3	19	24.7	17.7	20.3	21.4
NNB	7.2	6	9.8	36	19	22.8	23.9	26.1	16.1	24.1	21.8	12.6	15.2	13.4
NNBD	10	11	10	35	14	14.3	17.4	19.2	11.5	16.4	21.5	17.9	21.5	14.2
CC	13	8.4	12	60	58	60	36.5	30.7	33.1	52.4	18.8	13.6	49.7	35.1
WC	7.3	7.8	7.8	24	23	31.9	29.9	23.8	32.4	8	17.1	13.8	42.8	13.7
NEC	6.6	6.9	15	45	32	56.3	52.7	61	60.5	72.4	47.1	11.7	78.8	83.5
KB						66.2	53	47.5	54.6	60.6	12	56	46.3	56.9
NB						15.8	11.1	11.3	14.9	12.2	12	27.8	13.7	10.7
NNBDU								27.7	19.2	18.7	21.5	22	23.4	24.6
SCB								8.8	13.1	13.2	11.5	10.6	13.1	10.2

Note where <LOR half LOR is reported	Guideline Exceedences
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ANZECC/ARMCANZ Trigger Level	80
ANZECC/ARMCANZ High Level	370







Copper

Copper (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	15	12	22	4.4	4.7	3.1	3.7	2.7	3.5	3.7	2.8	3.3	4	3.5
WB	72	53	54	16	13	24.4	19.1	13.1	10.9	18.8	15	12.7	16.6	20.1
CZ	20	27	22	6	5.2	5.4	5.3	5.6	5.4	5.4	6.3	4	6.5	5.1
NNB	7.2	6	9.8	9	3.9	4.6	4.5	6.2	2.4	5.6	4.4	1.3	1.7	1.4
NNBD	10	11	10	8.8	1.9	2.1	2.4	3.4	3.6	3.6	3.4	4.5	5	3.9
CC	13	8.4	12	10	8.2	7.9	7.5	6.4	7.8	7.4	7.4	3.5	7.2	5.2
WC	7.3	7.8	7.8	4.6	3.5	4	3.7	3.3	4.9	1.9	3.2	2.3	6.6	2.8
NEC	6.6	6.9	15	15	8.7	14.5	12.9	15	15	17.4	11.7	5.6	17	19.1
KB						26.7	18.5	16.6	23.8	25.5	19.3	21.7	19.4	20.1
NB						2.3	2.6	2.6	2.2	1.5	1.5	4.3	1.8	1.2
NNBDU								10.8	6.4	5	5.7	7.1	9.1	9.2
SCB								1.9	1.6	1.4	2.3	1.4	1.7	1.3

Note where <LOR half LOR is reported

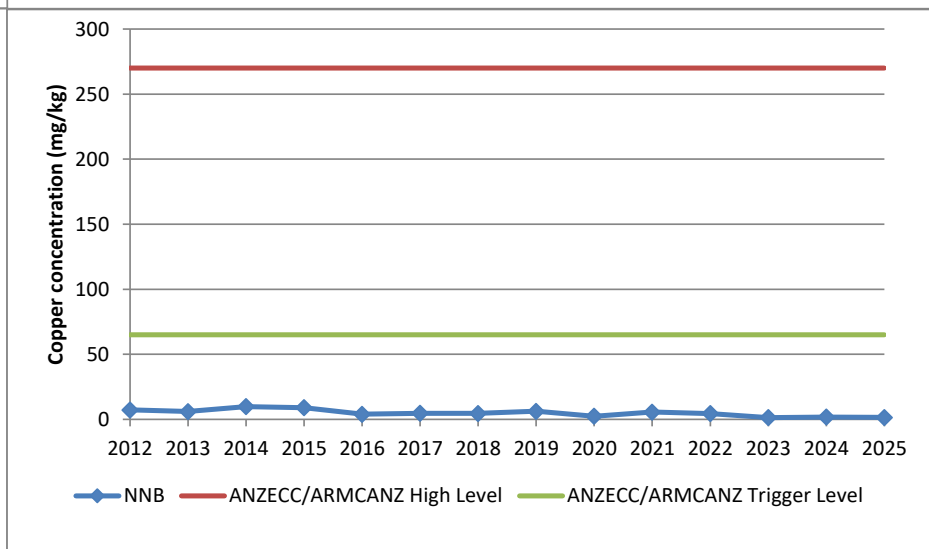
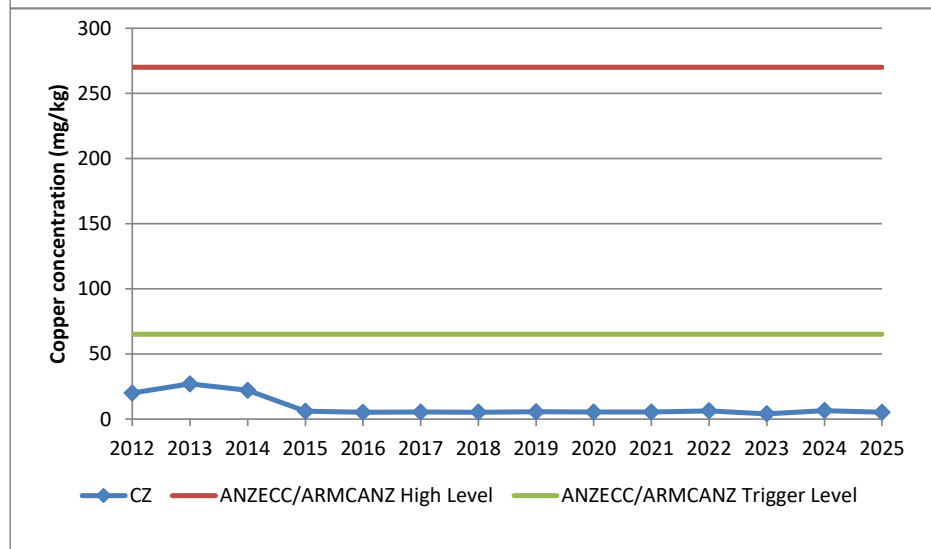
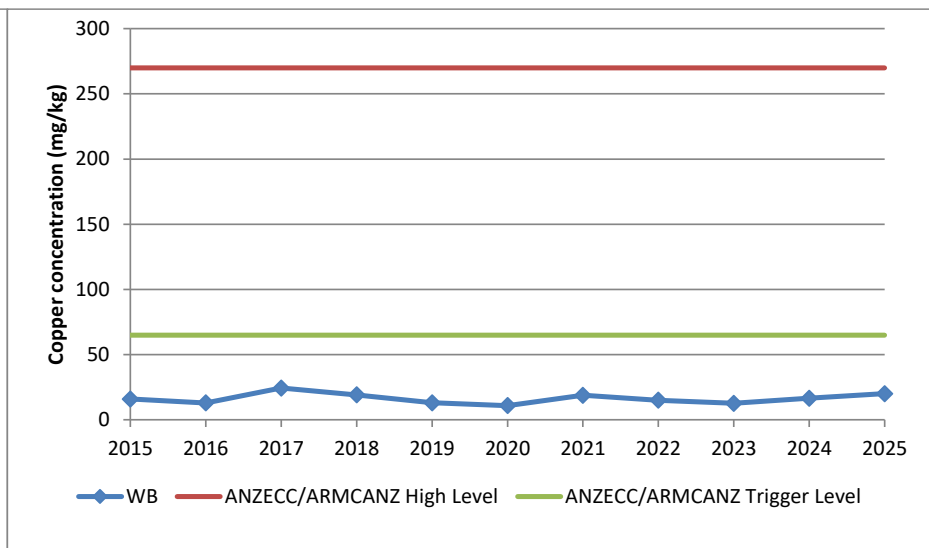
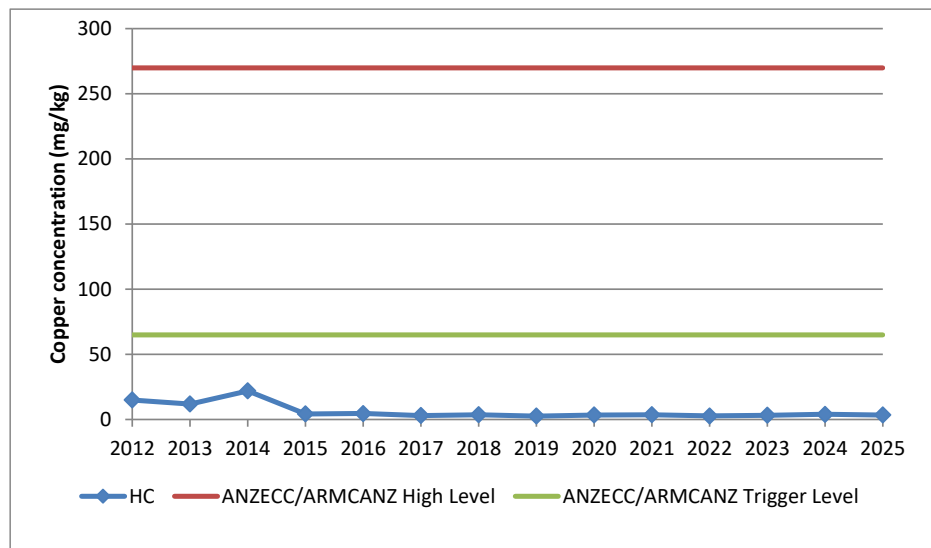
Guideline Exceedences

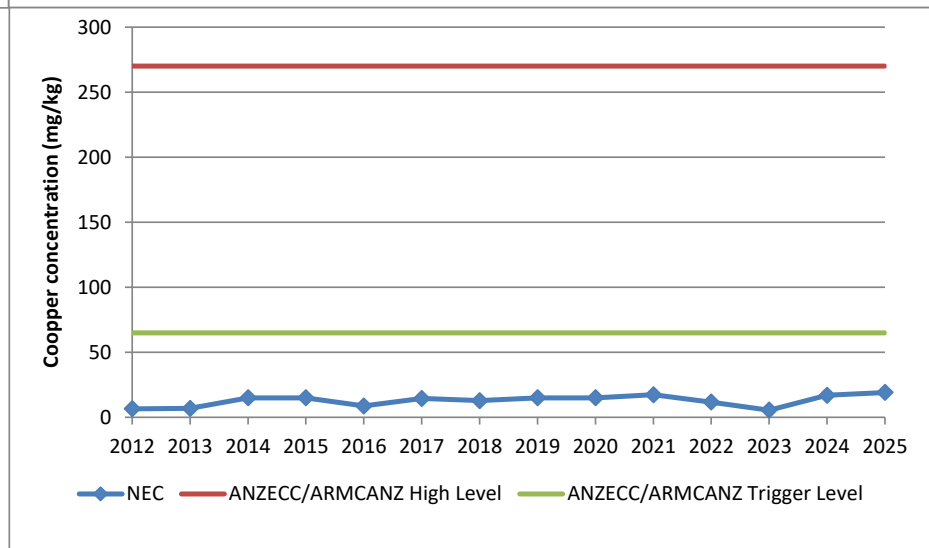
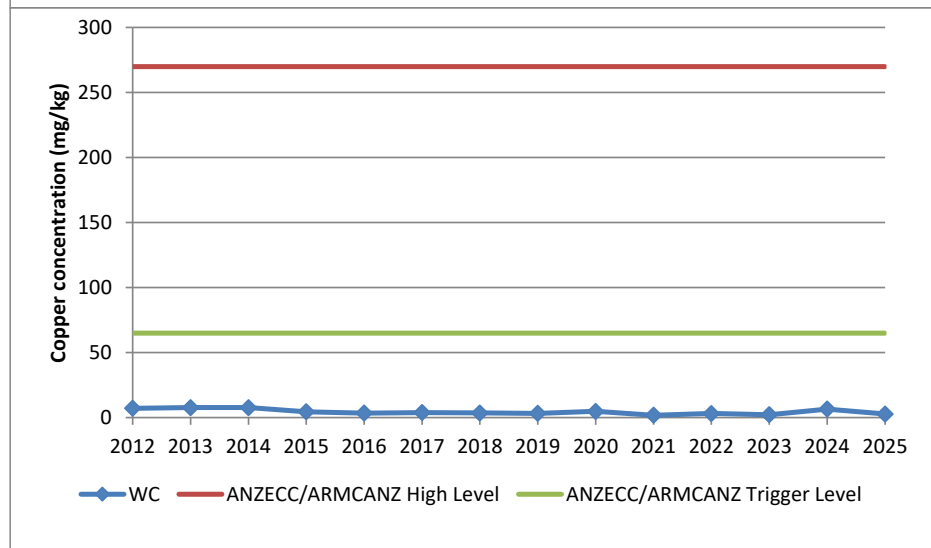
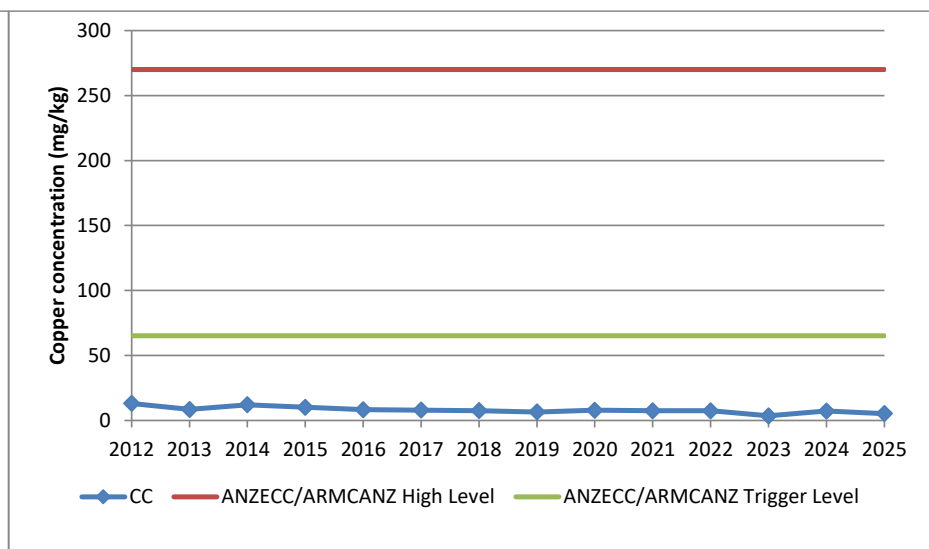
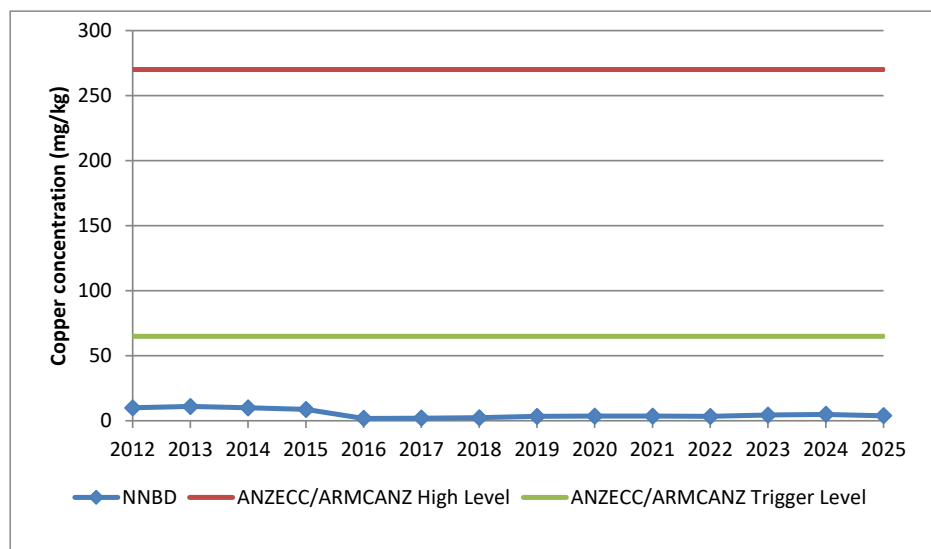
ANZECC/ARMCANZ Trigger Level

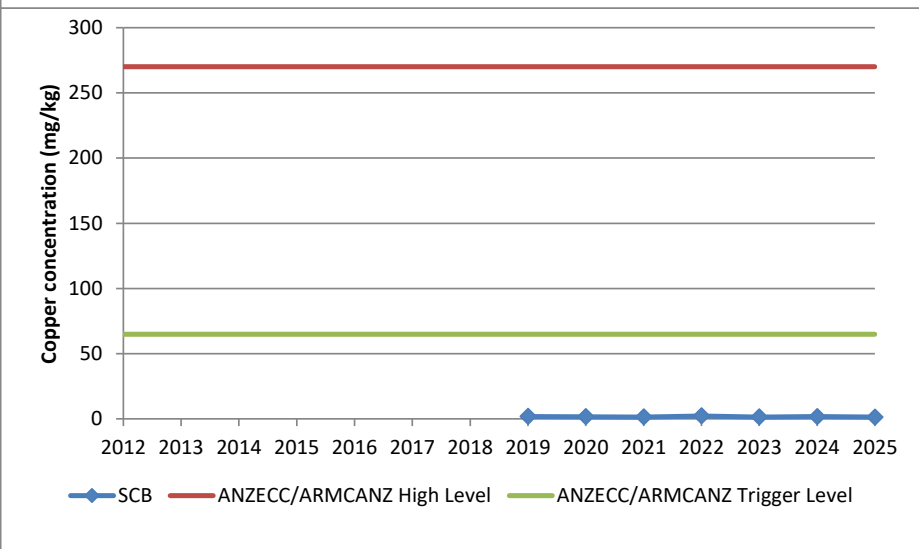
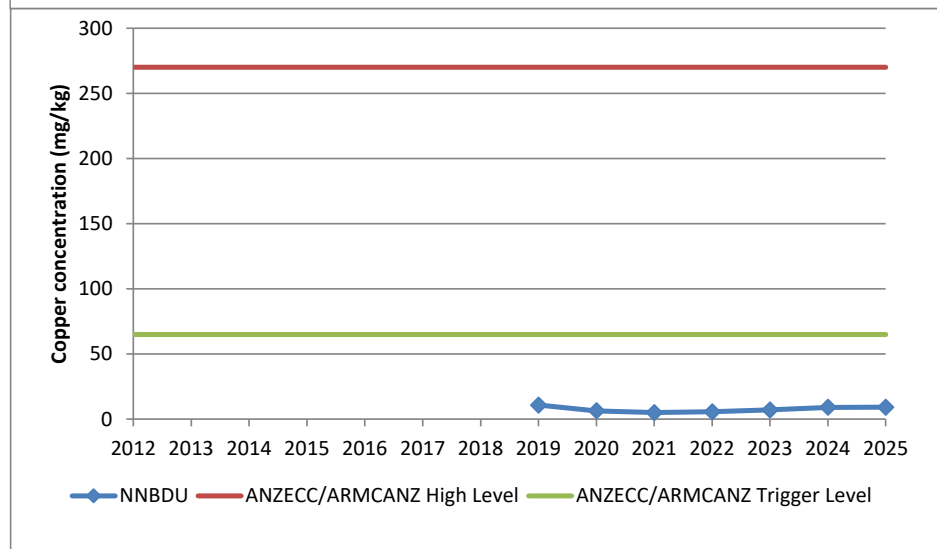
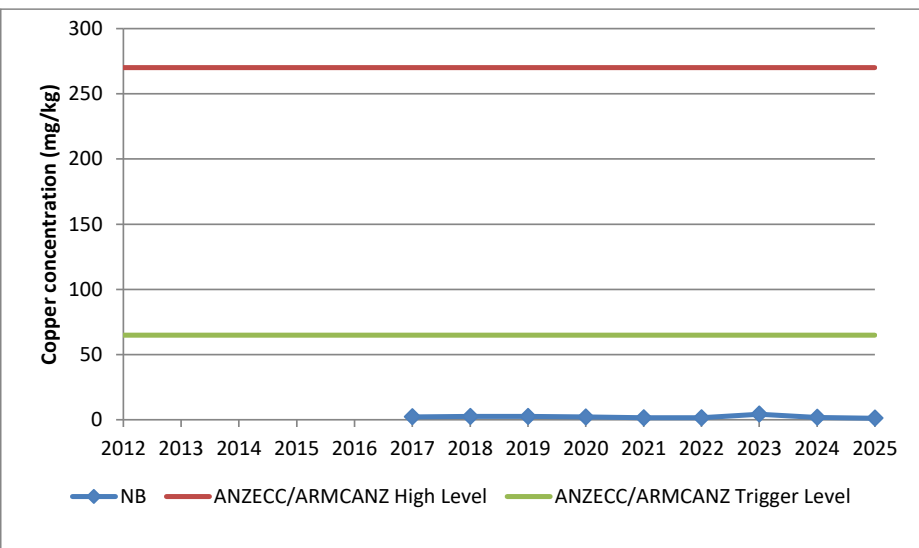
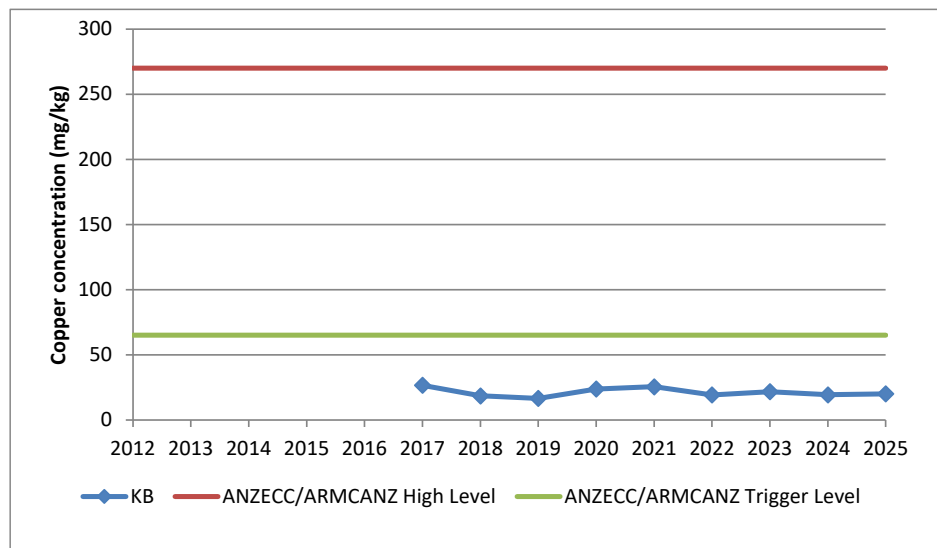
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ANZECC/ARMCANZ High Level

270







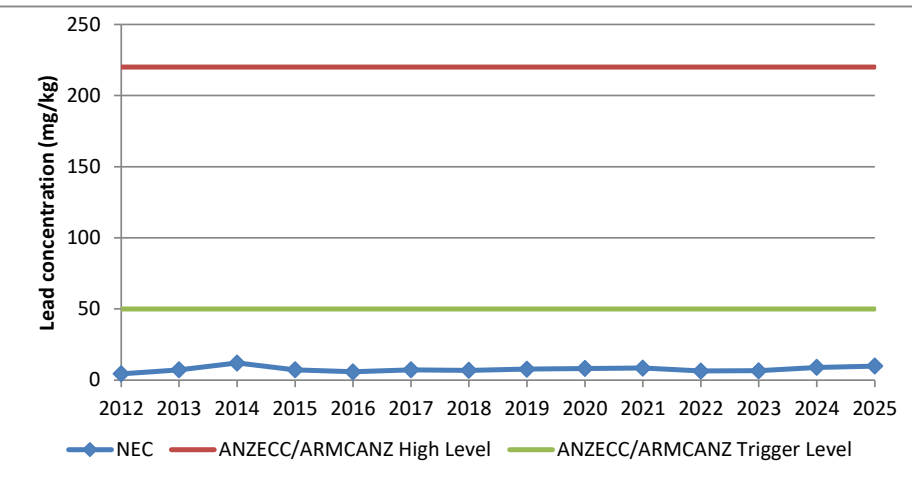
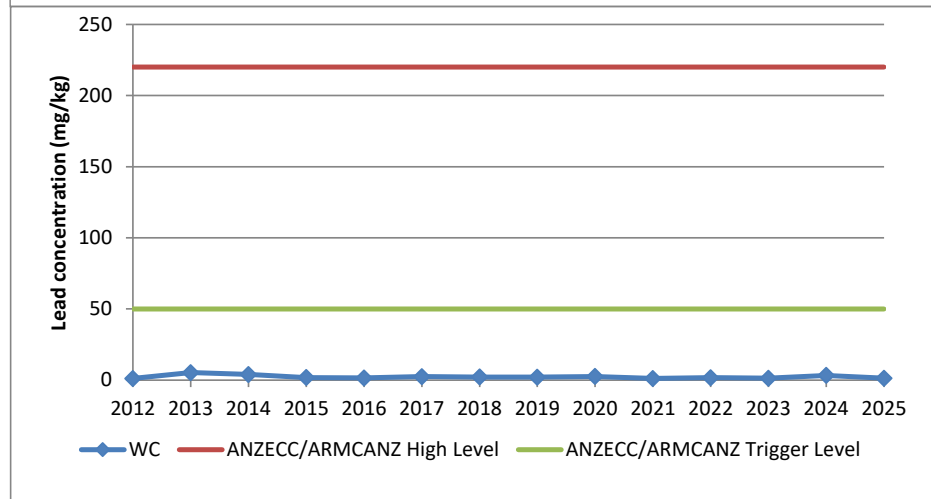
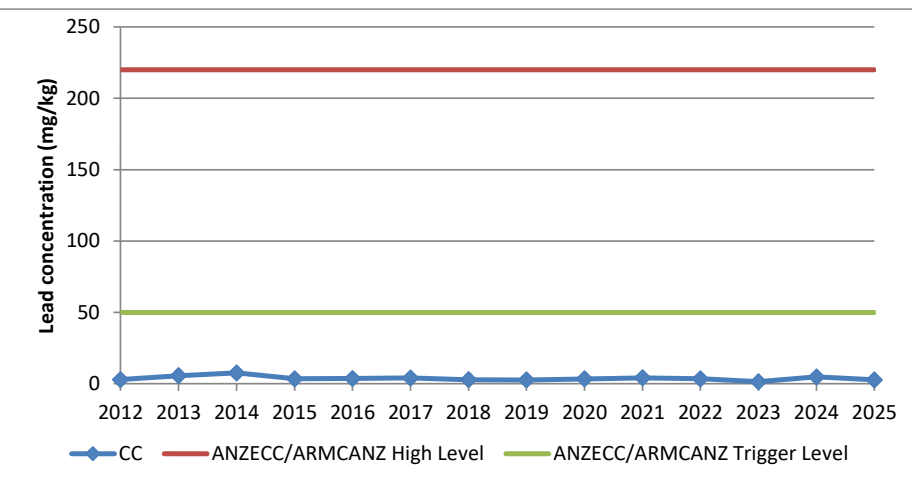
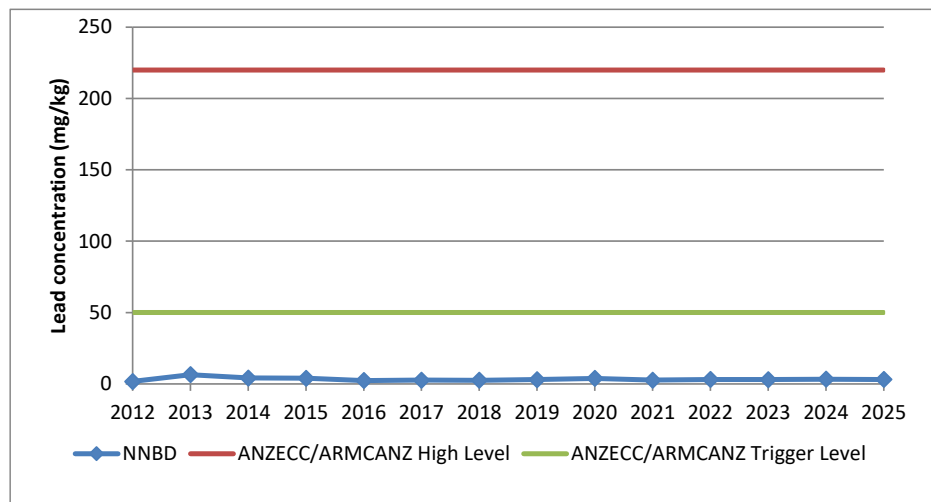
Lead

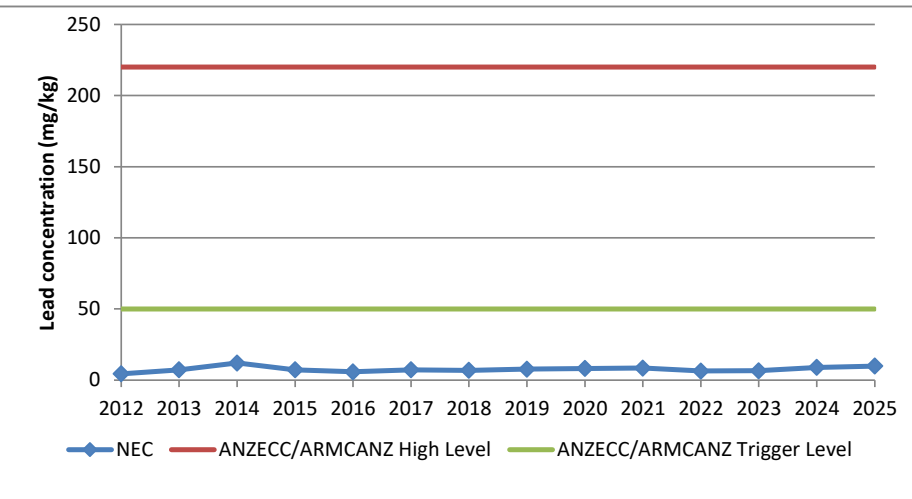
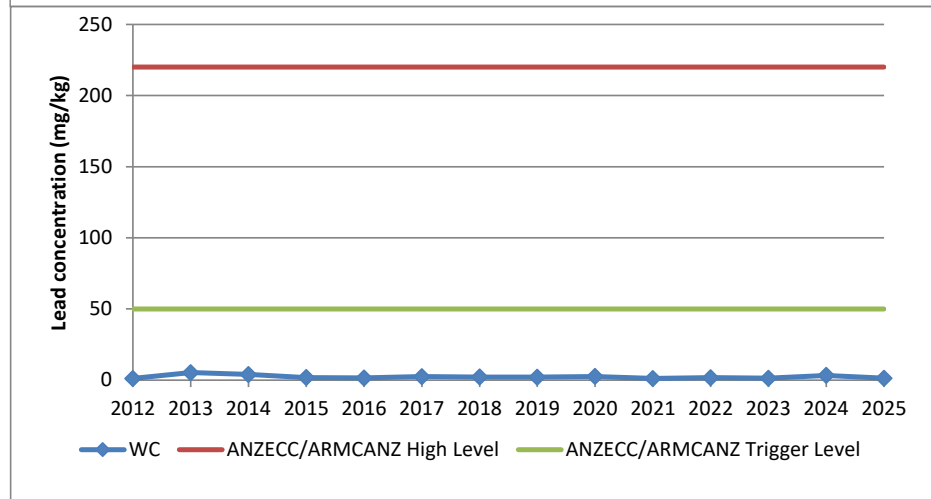
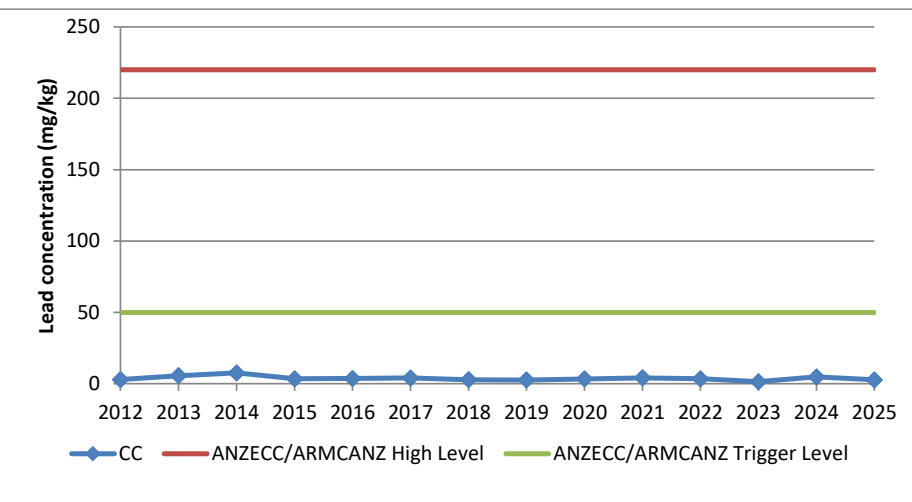
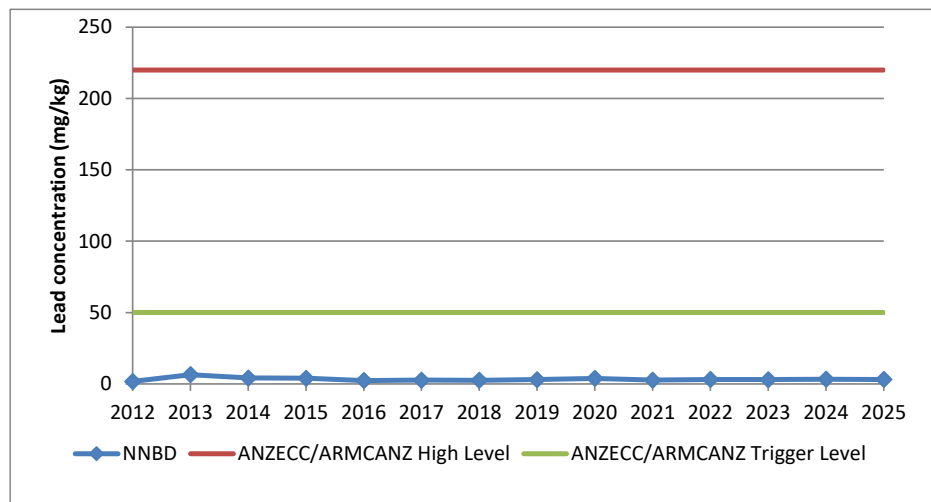
Lead (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	1.3	3.7	3.9	2.2	2	1.8	2.2	1.6	2.3	2.3	1.8	2.2	2.2	2.6
WB	5.1	9.2	8.1	4.7	4.8	9.7	7.7	5.6	4.6	9.3	6.2	5.7	7	6.9
CZ	5	12	9	4.2	4.7	4.3	4.8	4.7	5.8	5.8	4.5	5.2	6.6	5.6
NNB	1.4	3.5	4.2	4.3	2.5	3.1	3.1	3.9	2.6	4.4	3.1	2.4	2.6	2.3
NNBD	1.7	6.4	4.1	3.9	2.3	2.6	2.5	3	3.8	2.6	3.1	3	3.3	3.1
CC	2.9	5.6	7.6	3.5	3.7	4	2.8	2.6	3.4	4.1	3.5	1.4	4.8	2.7
WC	1.1	5.2	3.9	1.7	1.5	2.4	2.1	2	2.5	1.1	1.6	1.3	3.2	1.3
NEC	4.4	7.2	12	7.2	5.8	7.2	6.8	7.7	8.1	8.4	6.3	6.5	8.9	9.8
KB						9	6.3	6.1	7.6	7.9	5.5	8.9	6.5	7.6
NB						1.7	1.6	1.6	1.4	1.3	1.2	3.6	1.4	1.1
NNBDU								7.4	5.8	4.6	4.2	5.8	5.7	7.1
SCB								1.5	1.8	1.6	2	2.5	1.9	1.4

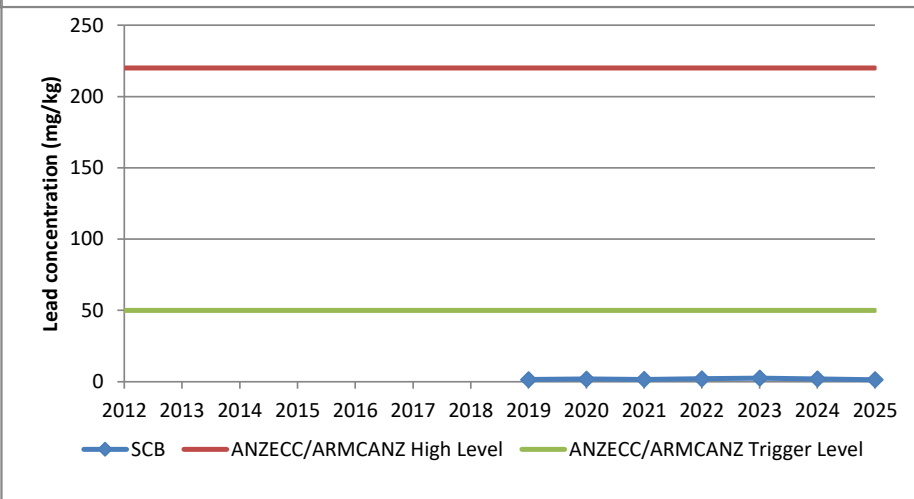
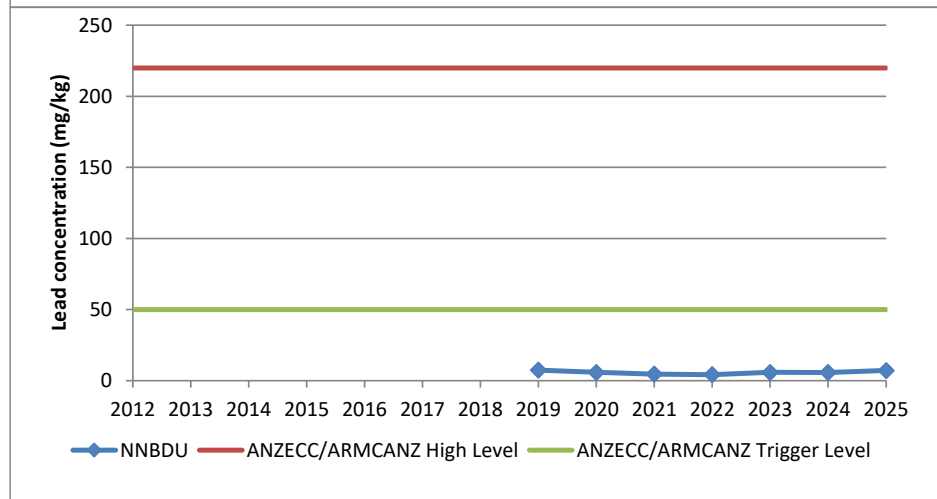
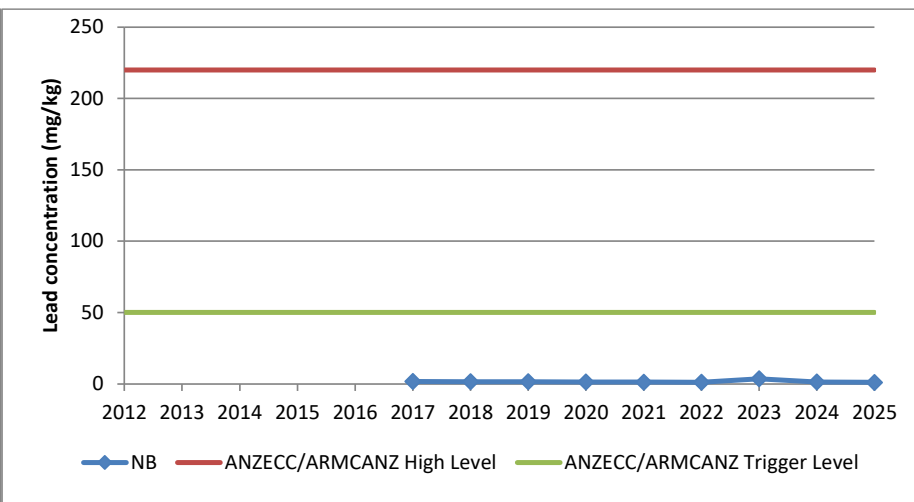
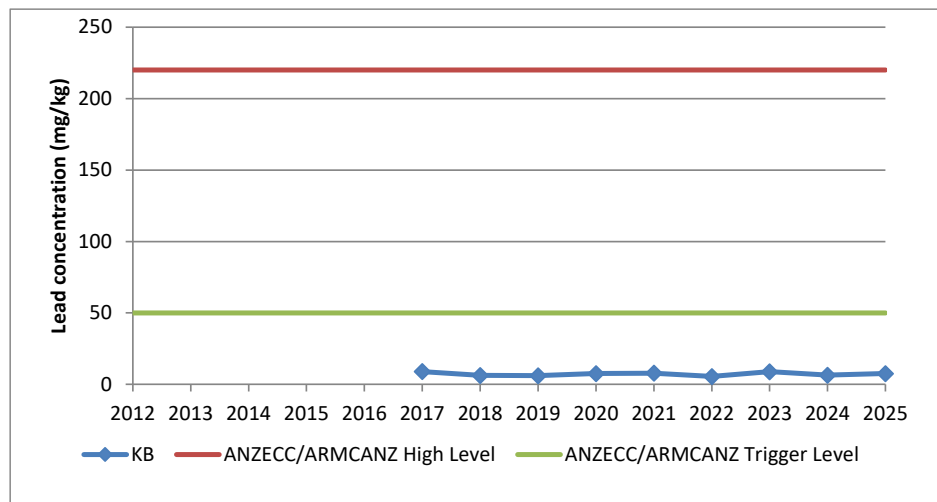
Note where <LOR half LOR is reported

Guideline Exceedences

ANZECC/ARMCANZ Trigger Level	50
ANZECC/ARMCANZ High Level	220





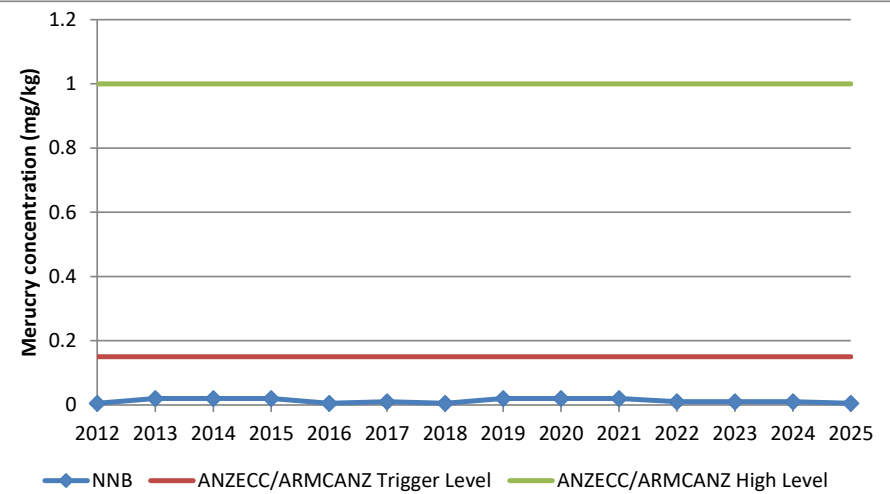
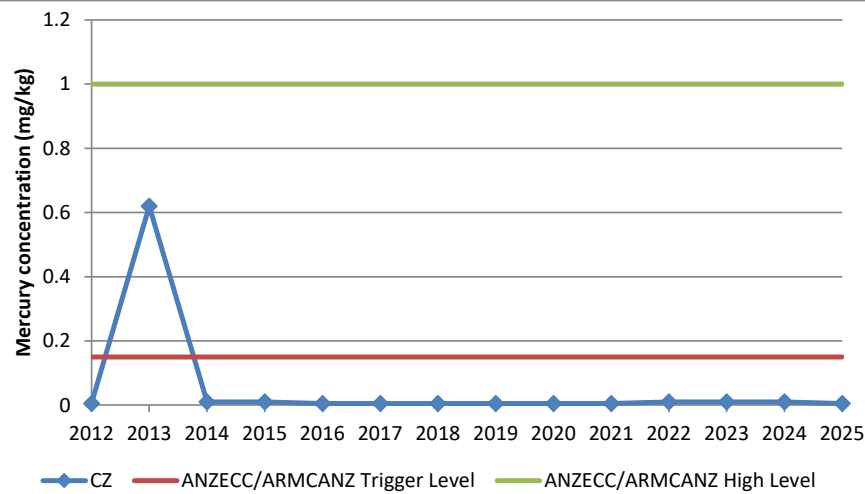
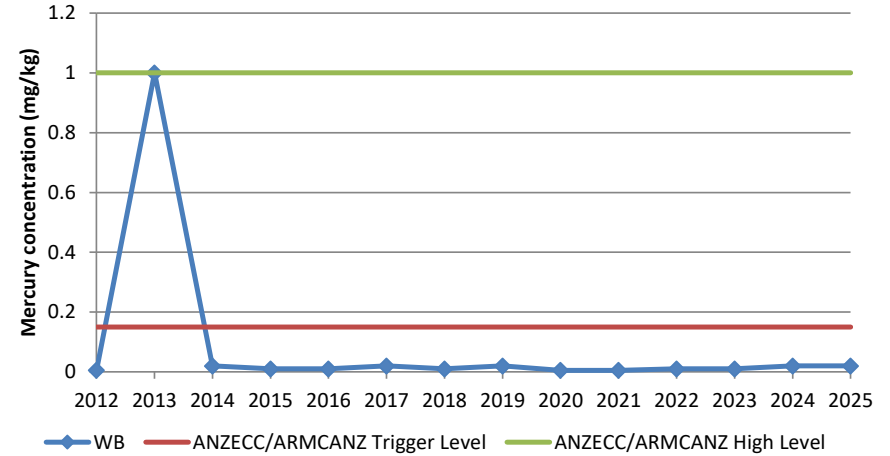
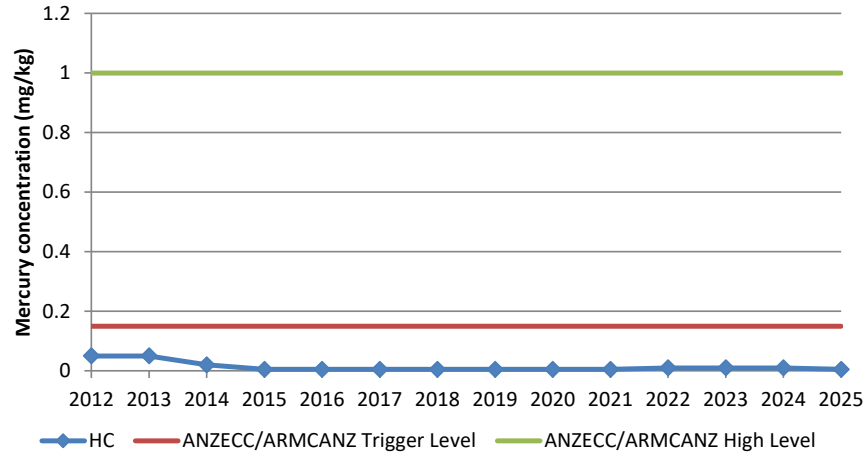


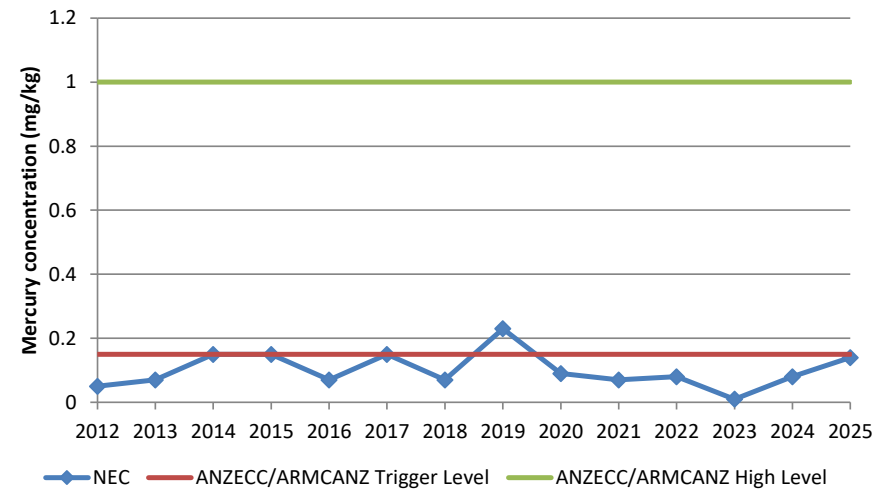
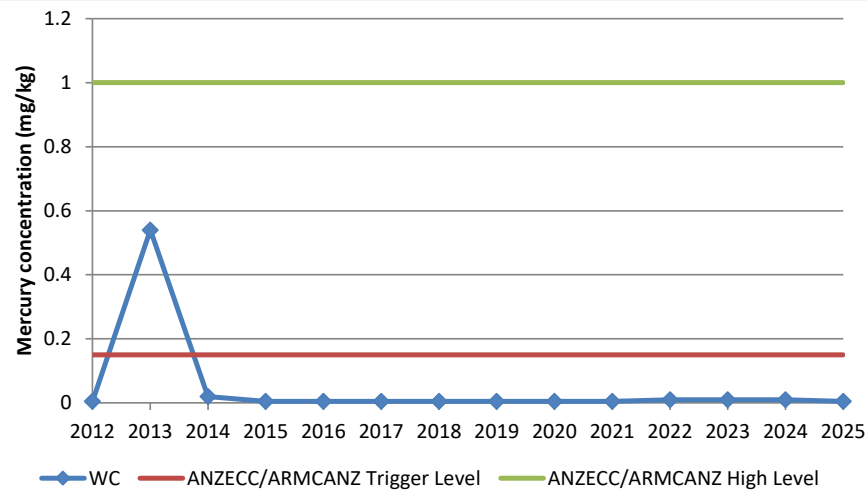
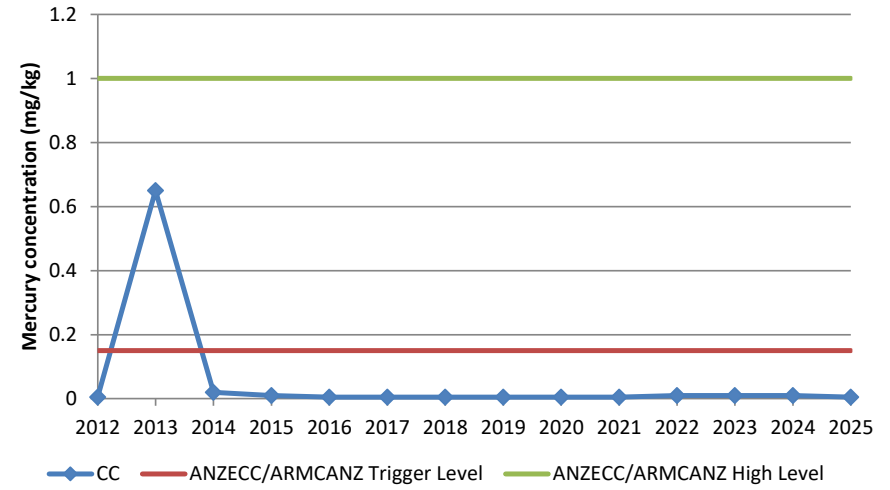
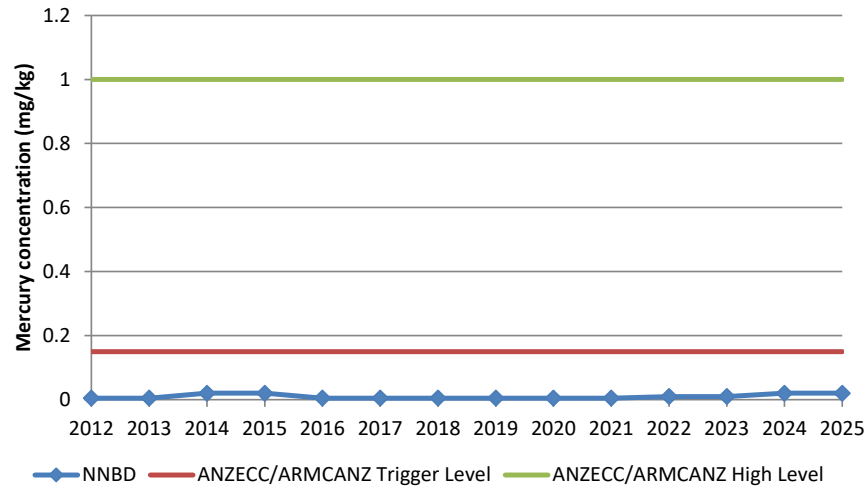
Mercury

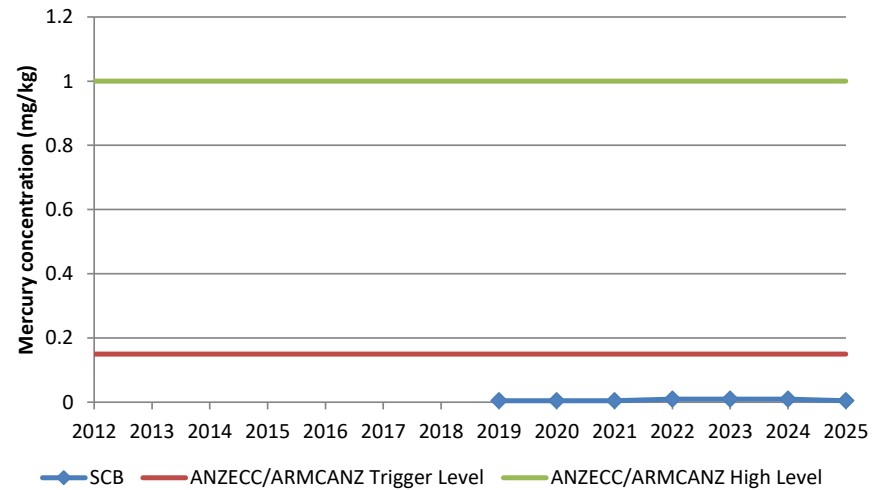
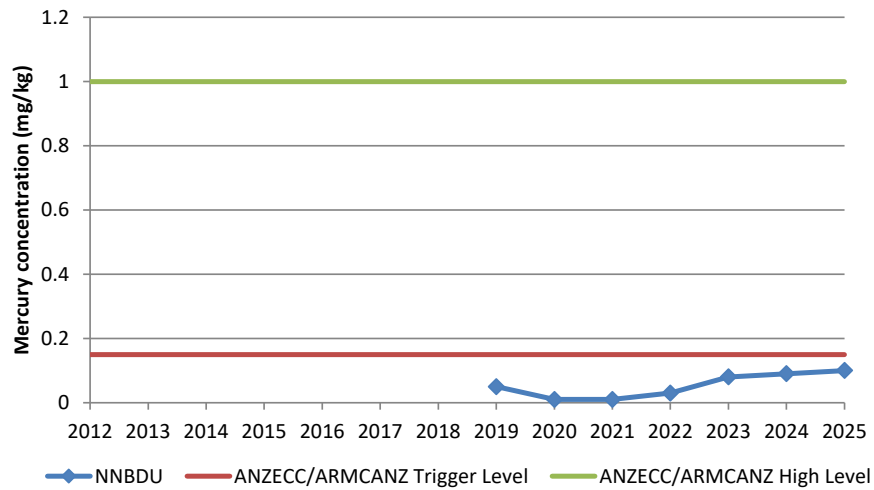
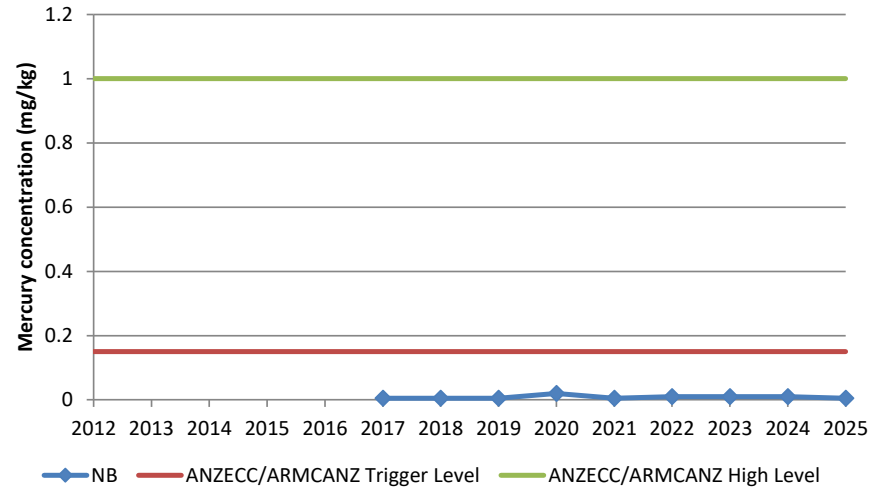
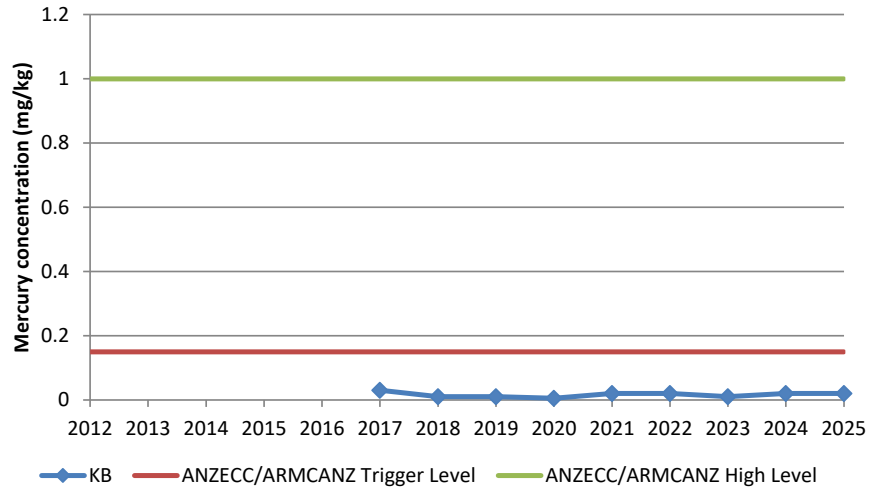
Mercury (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	0.05	0.05	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.005
WB	0.005	1	0.02	0.01	0.01	0.02	0.01	0.02	0.005	0.005	0.01	0.01	0.02	0.02
CZ	0.005	0.62	0.01	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.005
NNB	0.005	0.02	0.02	0.02	0.005	0.01	0.005	0.02	0.02	0.02	0.01	0.01	0.01	0.005
NNBD	0.005	0.005	0.02	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.02	0.02
CC	0.005	0.65	0.02	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.005
WC	0.005	0.54	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01	0.01	0.005
NEC	0.05	0.07	0.15	0.15	0.07	0.15	0.07	0.23	0.09	0.07	0.08	0.01	0.08	0.14
KB						0.03	0.01	0.01	0.005	0.02	0.02	0.01	0.02	0.02
NB						0.005	0.005	0.005	0.02	0.005	0.01	0.01	0.01	0.005
NNBDU								0.05	0.01	0.01	0.03	0.08	0.09	0.1
SCB								0.005	0.005	0.005	0.01	0.01	0.01	0.005

Note where <LOR half LOR is reported	Guideline Exceedences
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ANZECC/ARMCANZ Trigger Level	0.15
ANZECC/ARMCANZ High Level	1





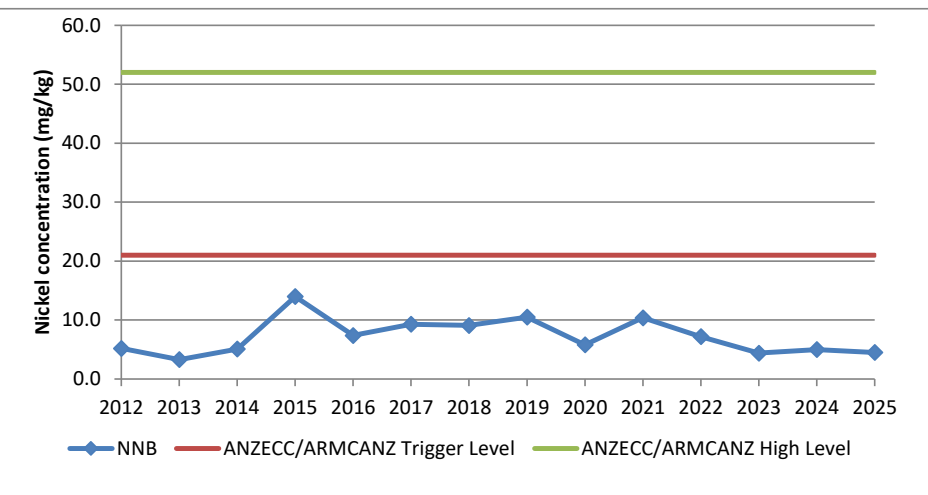
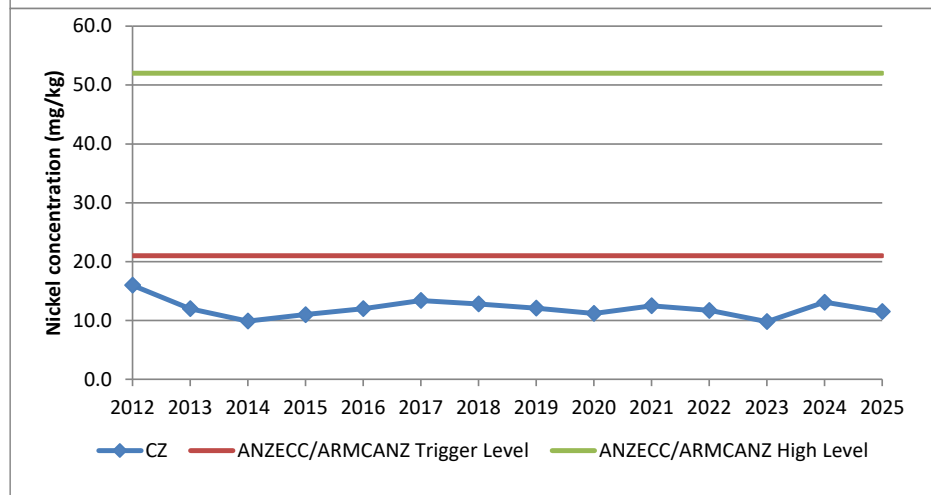
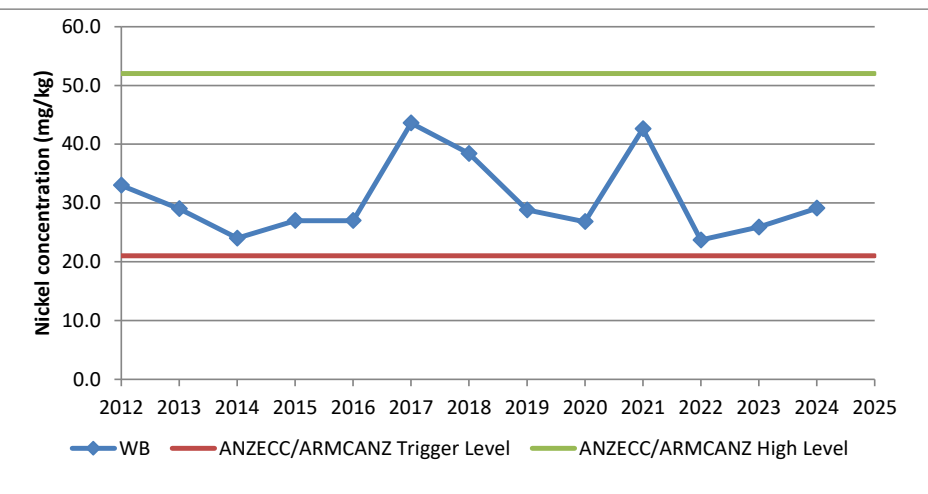
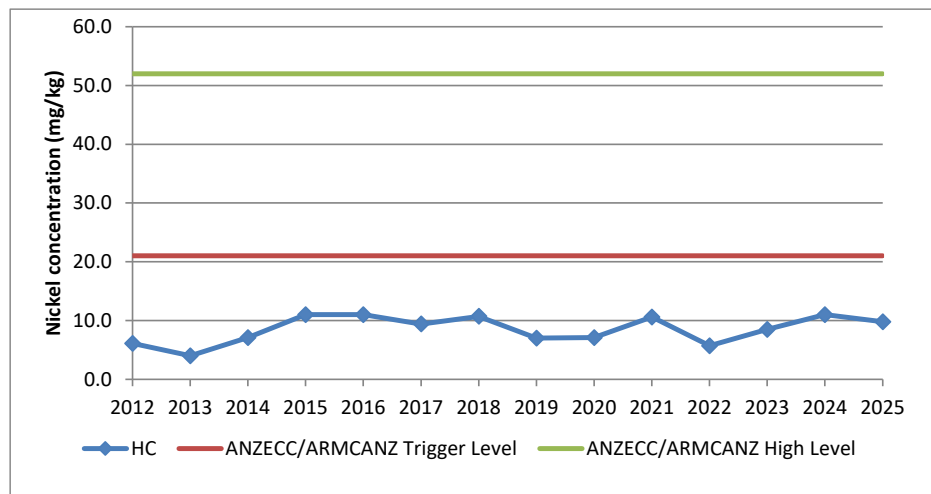


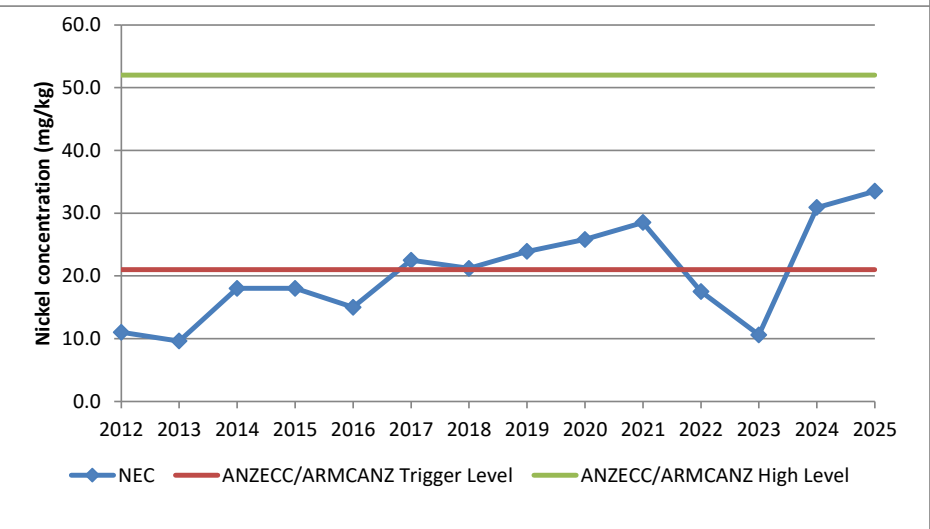
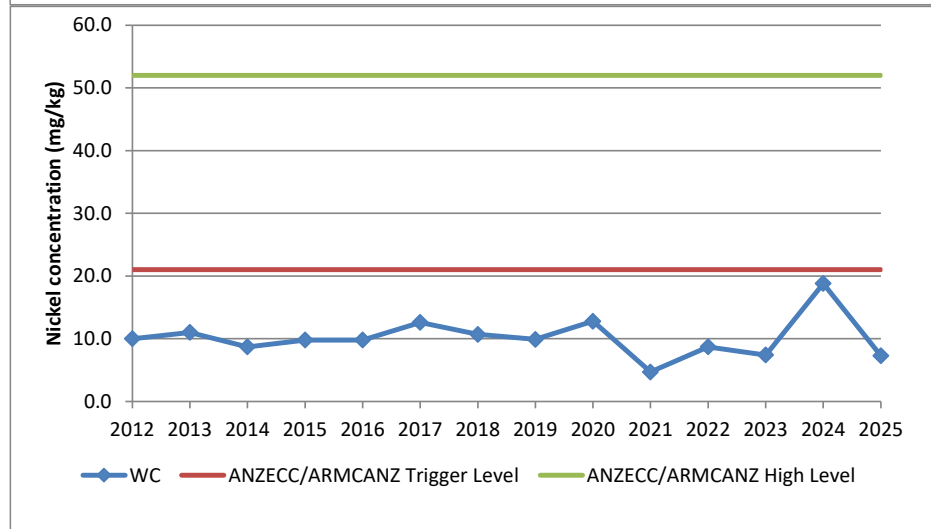
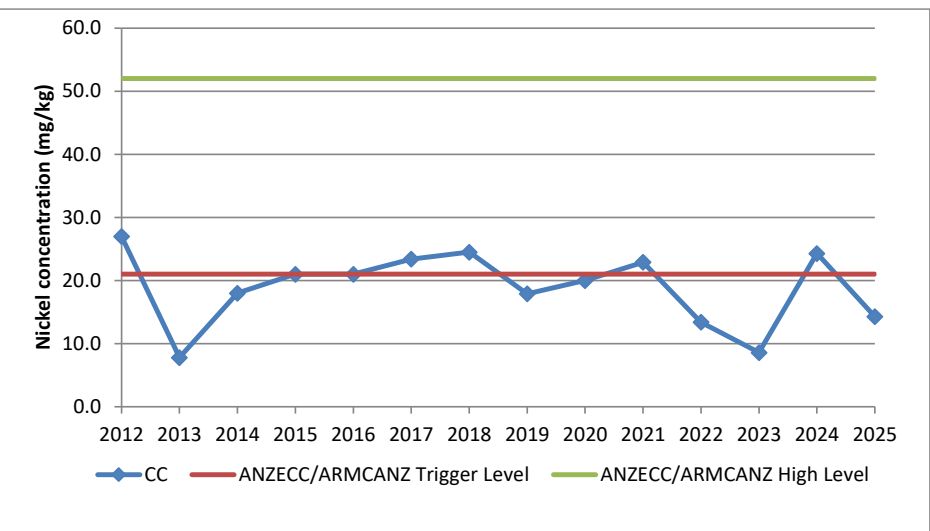
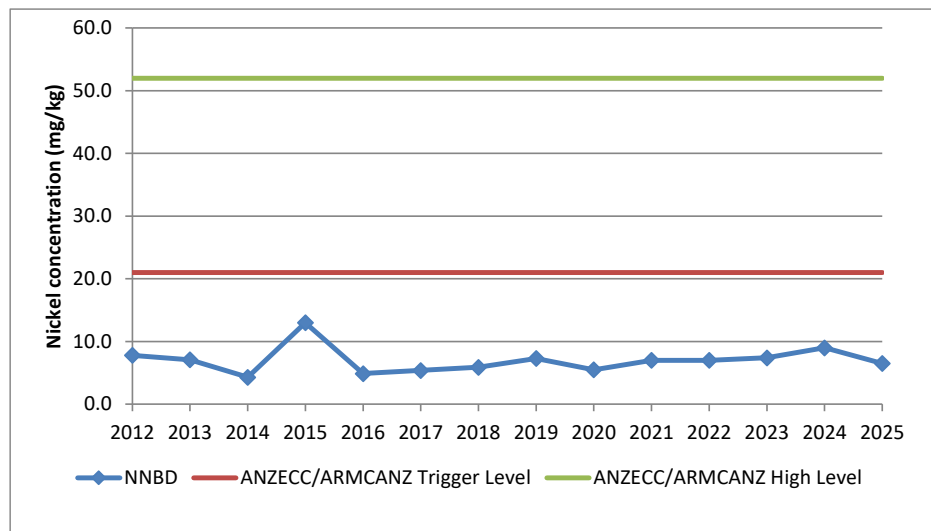
Nickel

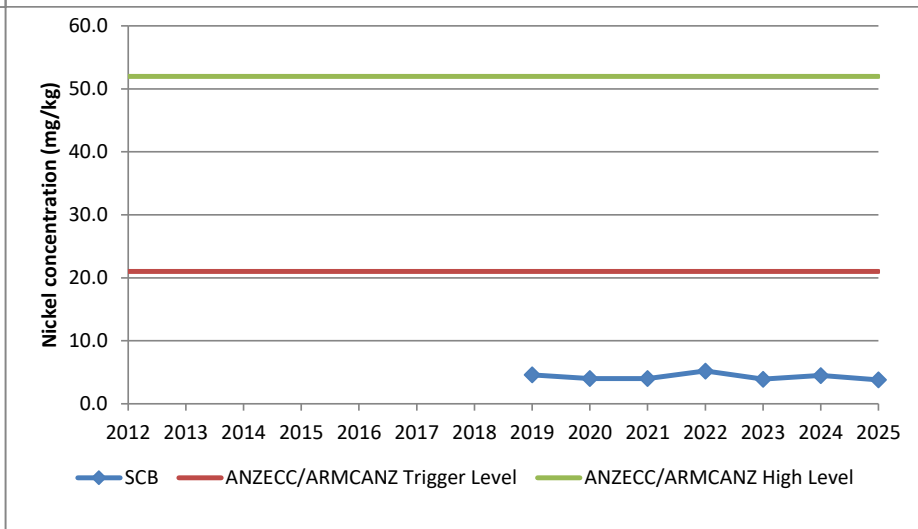
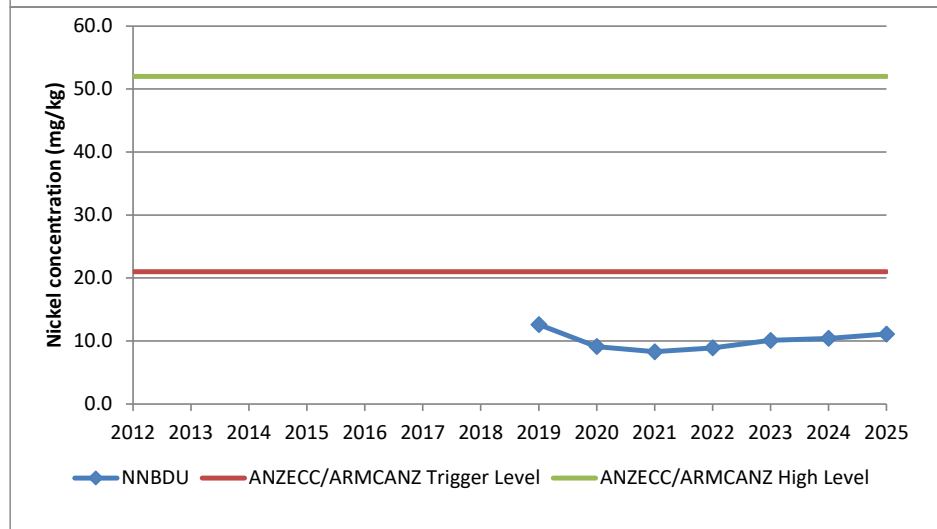
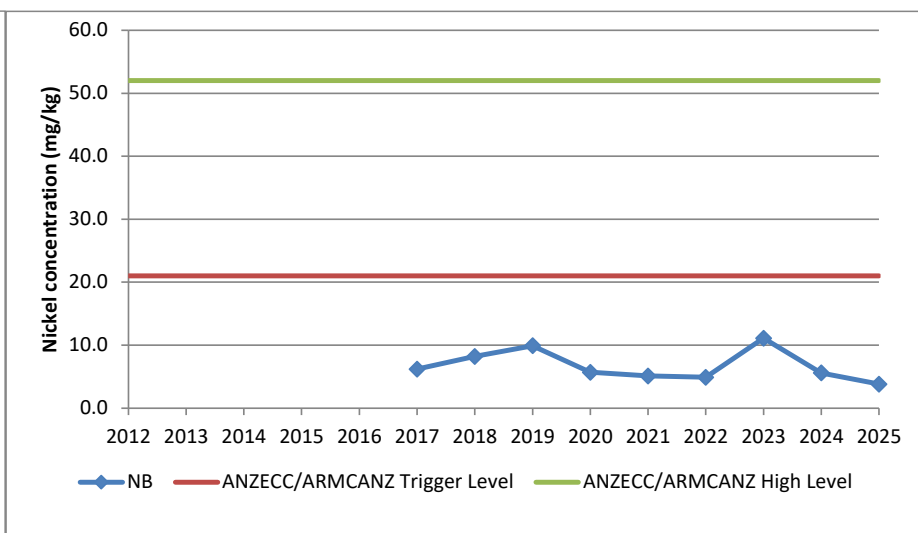
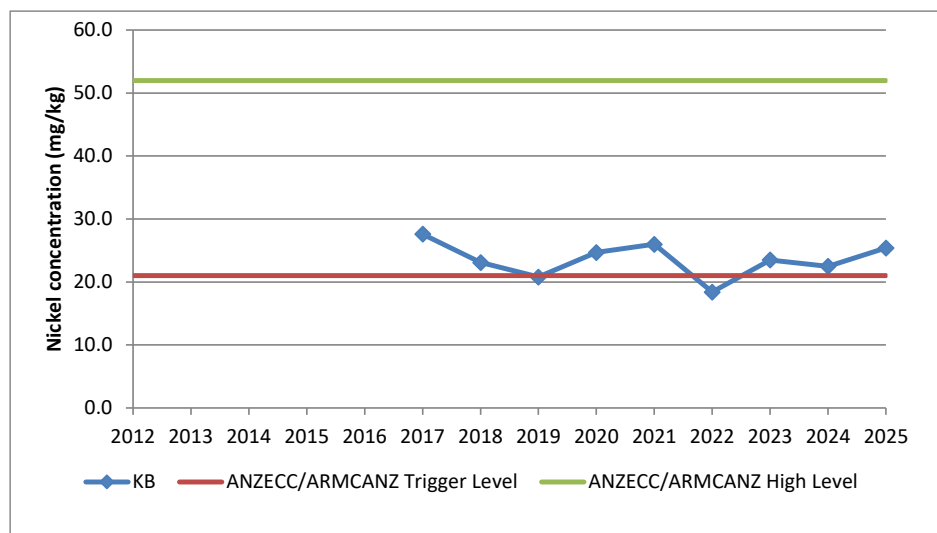
Nickel (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	6.1	4.0	7.1	11.0	11.0	9.4	10.7	7.0	7.1	10.6	5.7	8.5	11	9.8
WB	33.0	29.0	24.0	27.0	27.0	43.6	38.4	28.8	26.8	42.6	23.7	25.9	29.1	37.2
CZ	16.0	12.0	9.9	11.0	12.0	13.4	12.8	12.1	11.2	12.5	11.7	9.8	13.1	11.5
NNB	5.2	3.3	5.1	14.0	7.4	9.3	9.1	10.5	5.8	10.4	7.2	4.4	5	4.5
NNBD	7.8	7.1	4.3	13.0	4.9	5.4	5.9	7.3	5.5	7	7	7.4	9	6.5
CC	27.0	7.8	18.0	21.0	21.0	23.4	24.5	17.9	20	22.9	13.4	8.6	24.3	14.3
WC	10.0	11.0	8.7	9.8	9.8	12.6	10.7	9.9	12.8	4.7	8.7	7.4	18.8	7.3
NEC	11.0	9.6	18.0	18.0	15.0	22.5	21.2	23.9	25.8	28.5	17.5	10.6	30.9	33.5
KB						27.6	23.1	20.8	24.7	26	18.4	23.5	22.5	25.4
NB						6.2	8.2	9.9	5.7	5.1	4.9	11.1	5.6	3.8
NNBDU								12.6	9.1	8.3	8.9	10.1	10.4	11.1
SCB								4.6	4	4	5.2	3.9	4.5	3.8

Note where <LOR half LOR is reported	Guideline Exceedences
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ANZECC/ARMCANZ Trigger Level	21
ANZECC/ARMCANZ High Level	52





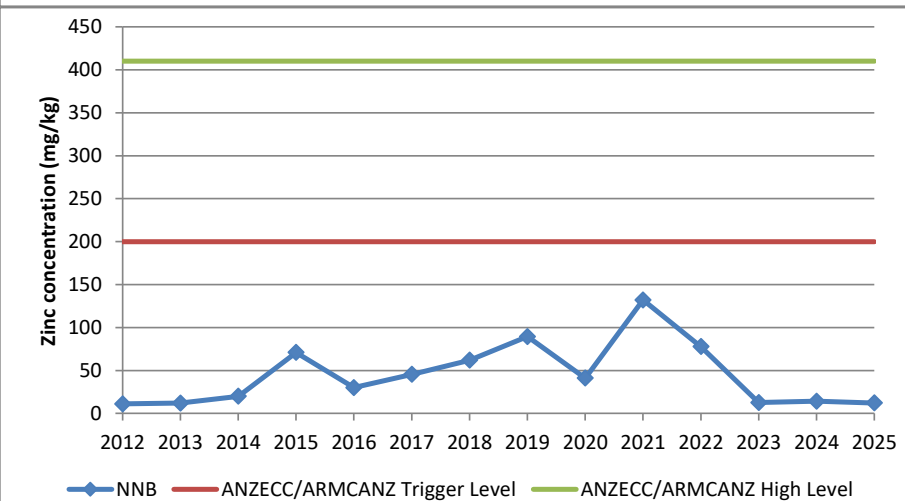
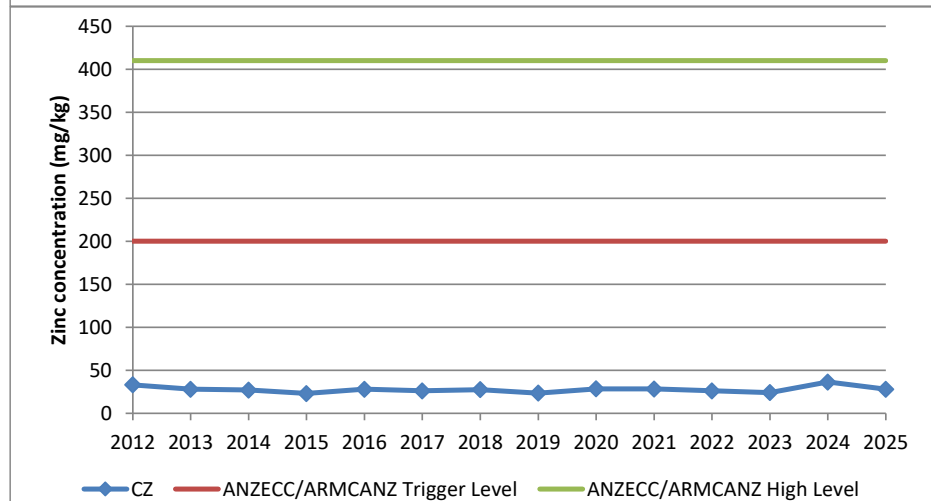
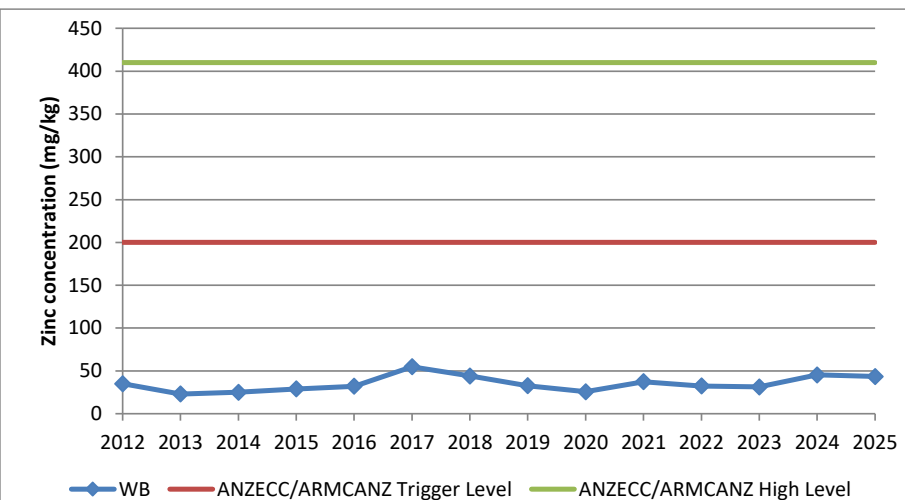
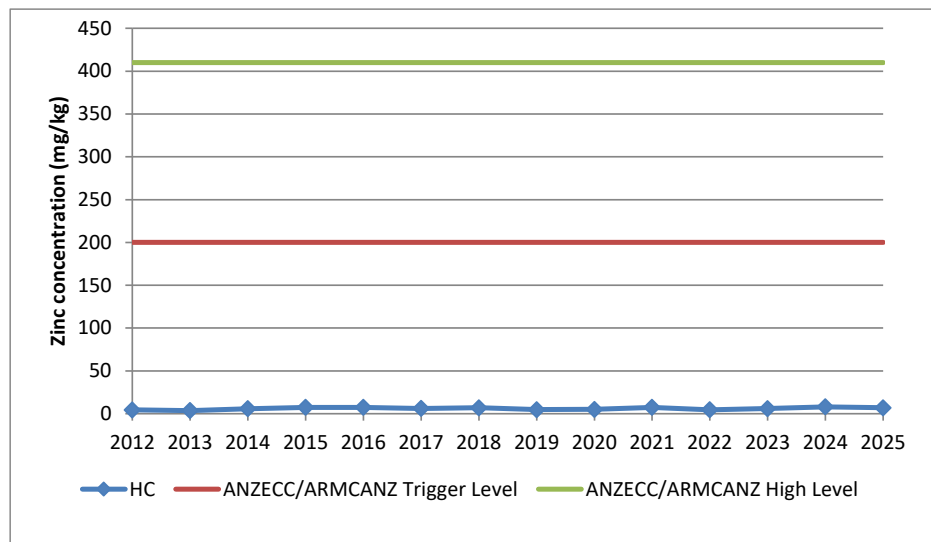


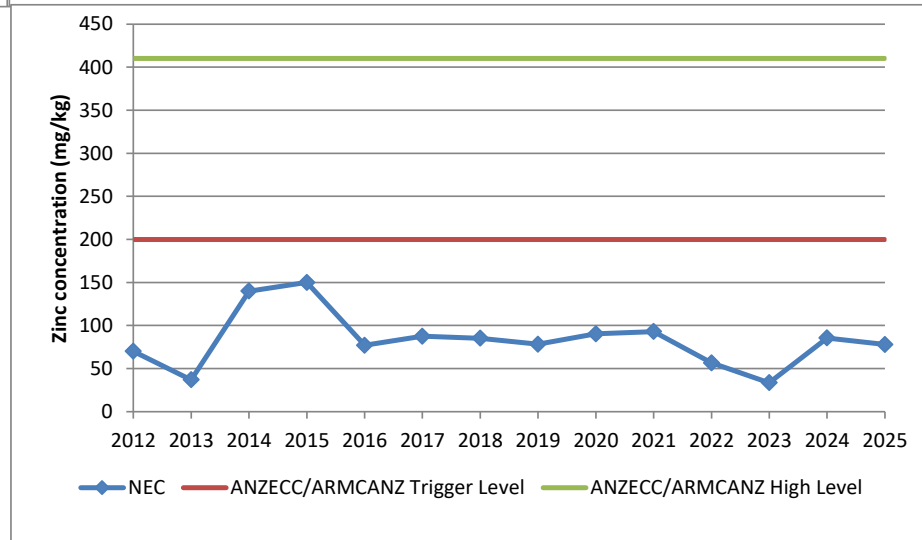
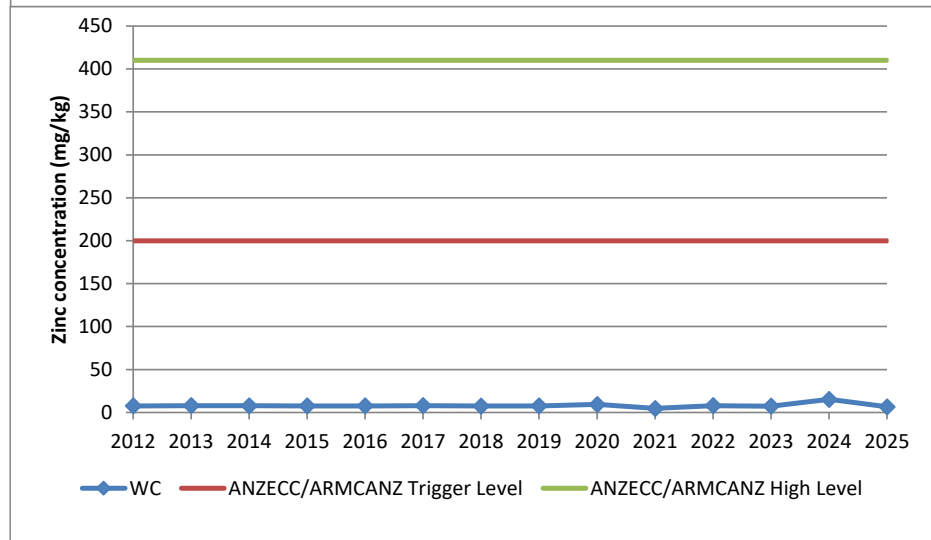
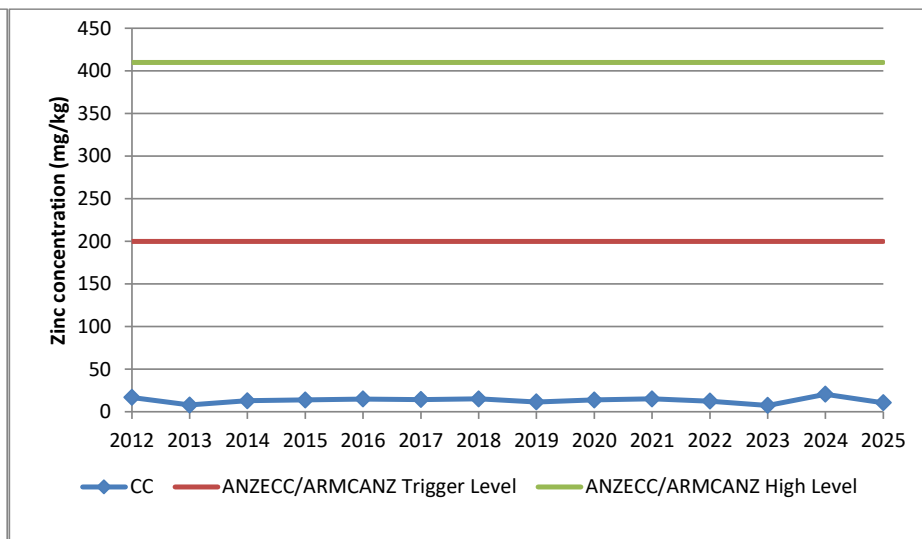
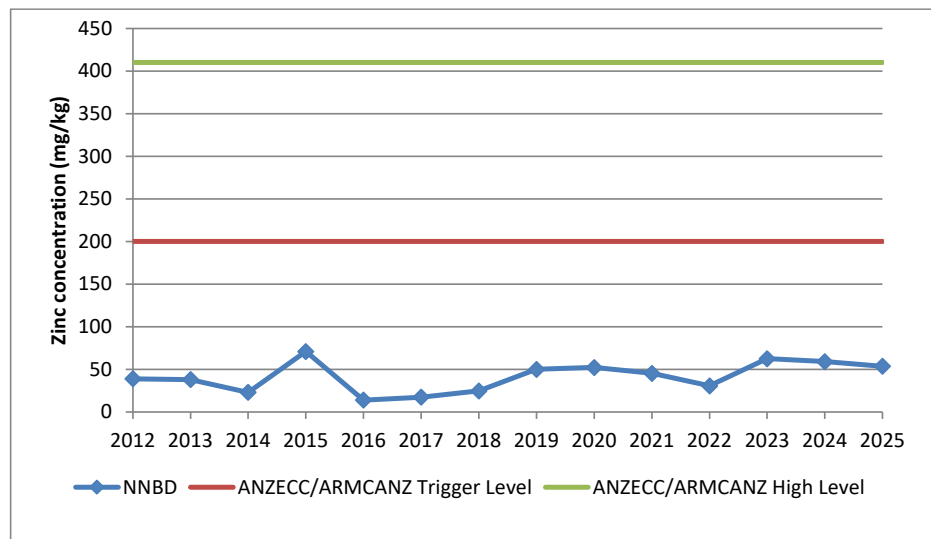
Zinc

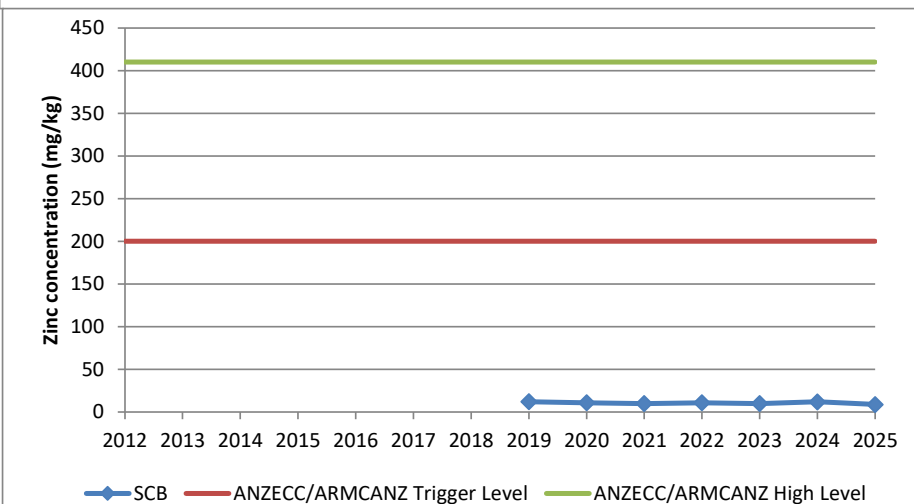
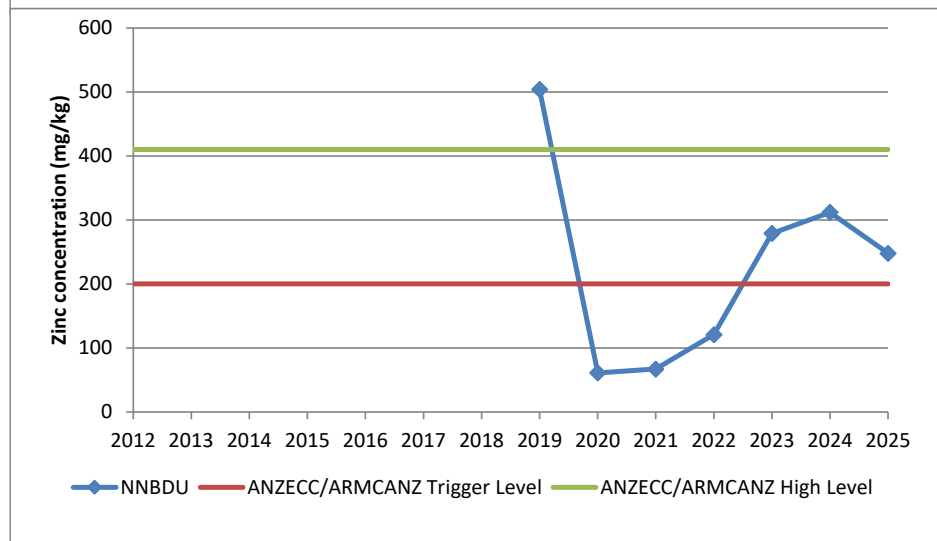
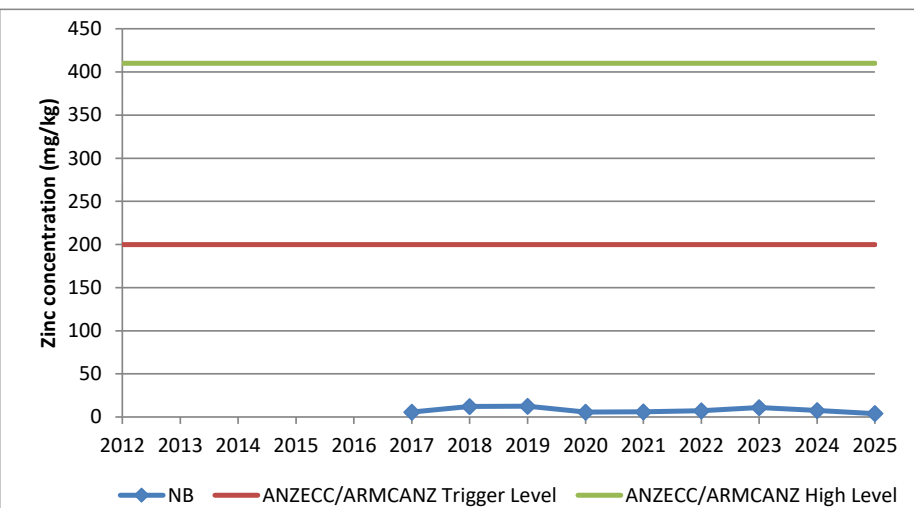
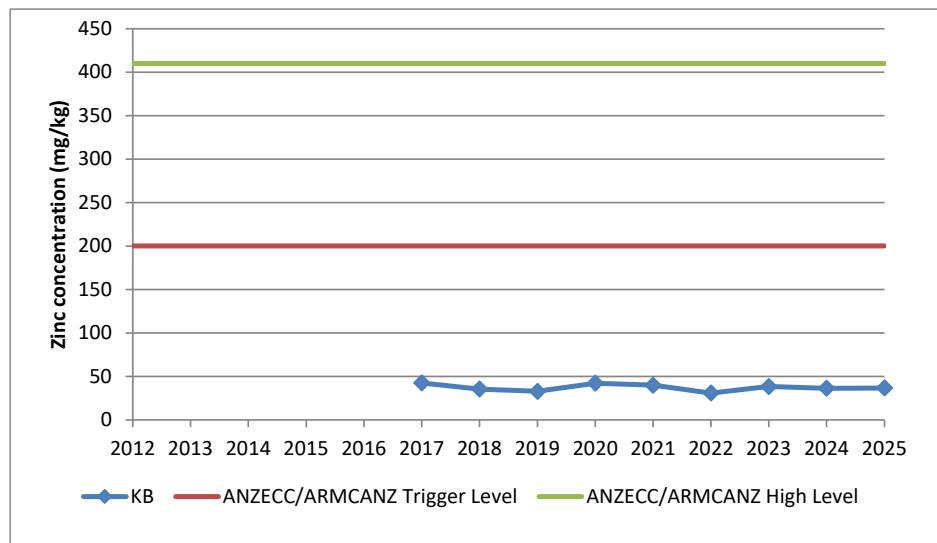
Zinc (mg/kg dry weight)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
HC	4.4	3.7	5.9	7.4	7.4	6.2	7	4.7	5.1	7.4	4.6	6	8	6.9
WB	35	23	25	29	32	54.8	44	32.7	25.7	37.4	32.3	31.2	45.3	43.5
CZ	33	28	27	23	28	26	27.4	23.5	28.4	28.3	26.1	24.1	36.3	27.9
NNB	11	12	20	71	30	45.4	61.9	89.4	41.1	132	77.8	12.6	14.1	12.2
NNBD	39	38	23	71	14	17.5	24.7	50.0	52.2	45.4	30.7	62.5	59.2	53.7
CC	17	8	13	14	15	14.4	15.3	11.6	14	15.2	12.6	7.6	20.7	10.7
WC	7.6	8	7.8	7.7	7.7	8	7.4	7.6	9.4	4.7	8	7.3	15.3	6.5
NEC	70	37	140	150	77	87.5	85.2	78.2	90.4	92.9	56.7	33.6	85.5	77.9
KB						42.6	35.5	33.0	42.3	40	31	38.4	36.4	36.8
NB						5.7	12.2	12.4	5.7	6	7.2	10.9	7.5	4
NNBDU								504.0	61.2	67.2	121	279	312	248
SCB								12.1	10.9	9.9	10.9	9.9	12	8.8

Note where <LOR half LOR is reported	Guideline Exceedences
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ANZECC/ARMCANZ Trigger Level	200
ANZECC/ARMCANZ High Level	410







Total Petroleum Hydrocarbons

SITE	TPH mg/kg dry weight													
	2012	2013	2014	2015	2016	2017	2018	2019*	2020**	2021*	2022*	2023*	2024*	2025*
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
HC	<100	<100	<100	<50	120	31	31	59	8	65	112	54	7	77
WB	17,000	<100	<100	56	200	188	113	55	197	43	55	41	161	43
CZ	7500	<100	<100	51	<100	89	202	115	<3	89	91	59	7	25
NNB	21,000	<100	<100	68	<100	89	54	101	49	115	121	108	19	13
NNBD	<100	<100	<100	<50	<100	21	43	105	<3	83	132	105	22	4
CC	13,000	<100	<100	154	<100	186	22	40	135	66	34	111	11	269
WC	42,000	<100	<100	<50	470	99	150	172	185	42	36	93	103	133
NEC	20,000	<100	<100	500	290	597.0	132	50	349.0	121	29	26	25	9
KB	NA	NA	NA	NA	NA	281	188	98	401.0	70	71	71	81	2
NB	NA	NA	NA	NA	NA	<3	40	33	89	145	130	65	48	137*
NNBDU	NA	NA	NA	NA	NA	NA	NA	415.0	46	738.0	39	143	322	<3
SCB	NA	NA	NA	NA	NA	NA	NA	27	13	42	79	131	20	<3

*Total organic carbon (TOC) correction was applied to TPH concentrations for all sediment samples except NB, as the TOC concentration at NB was less than 0.2%.

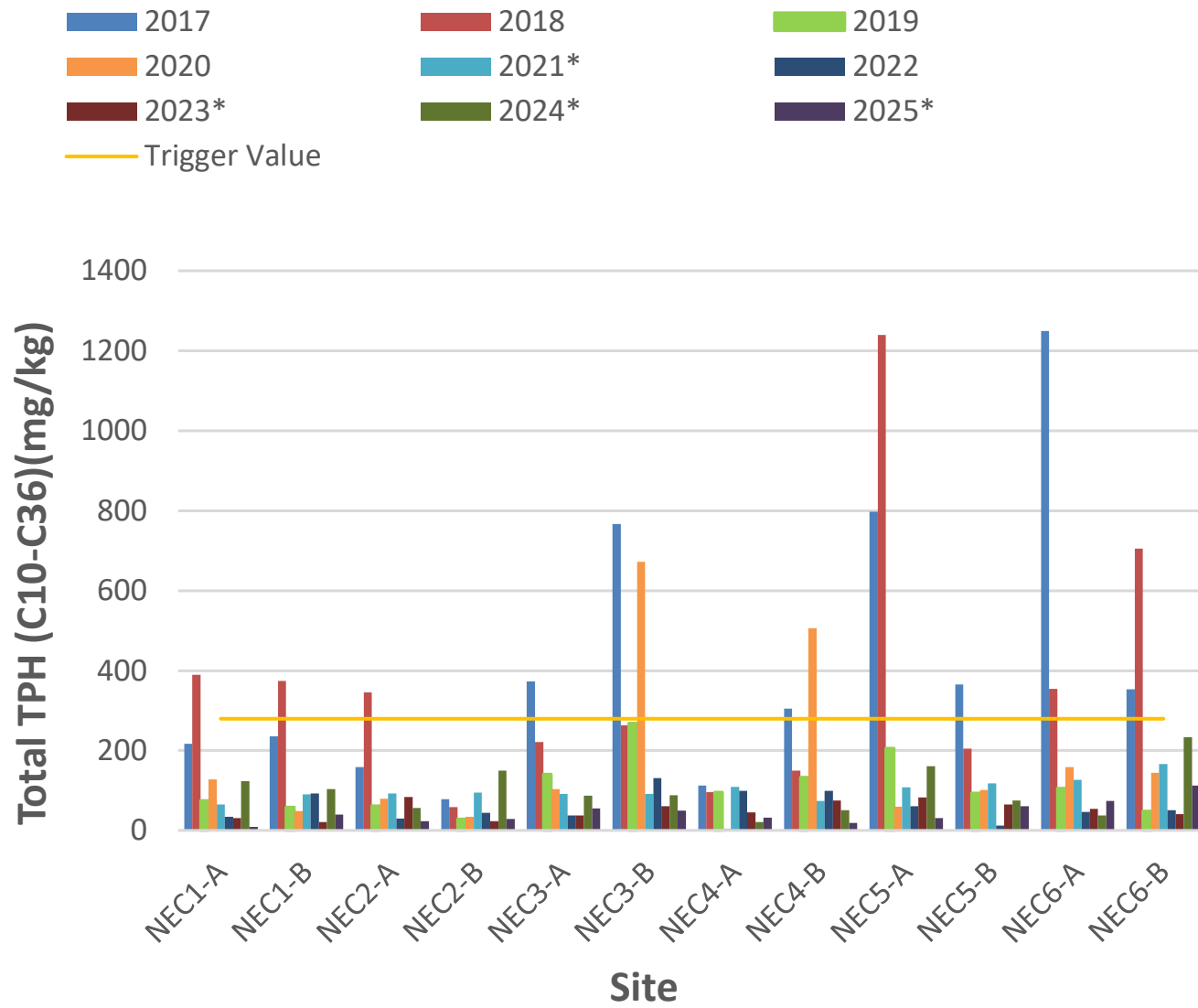
Methyldiethanolamine

[illegible]

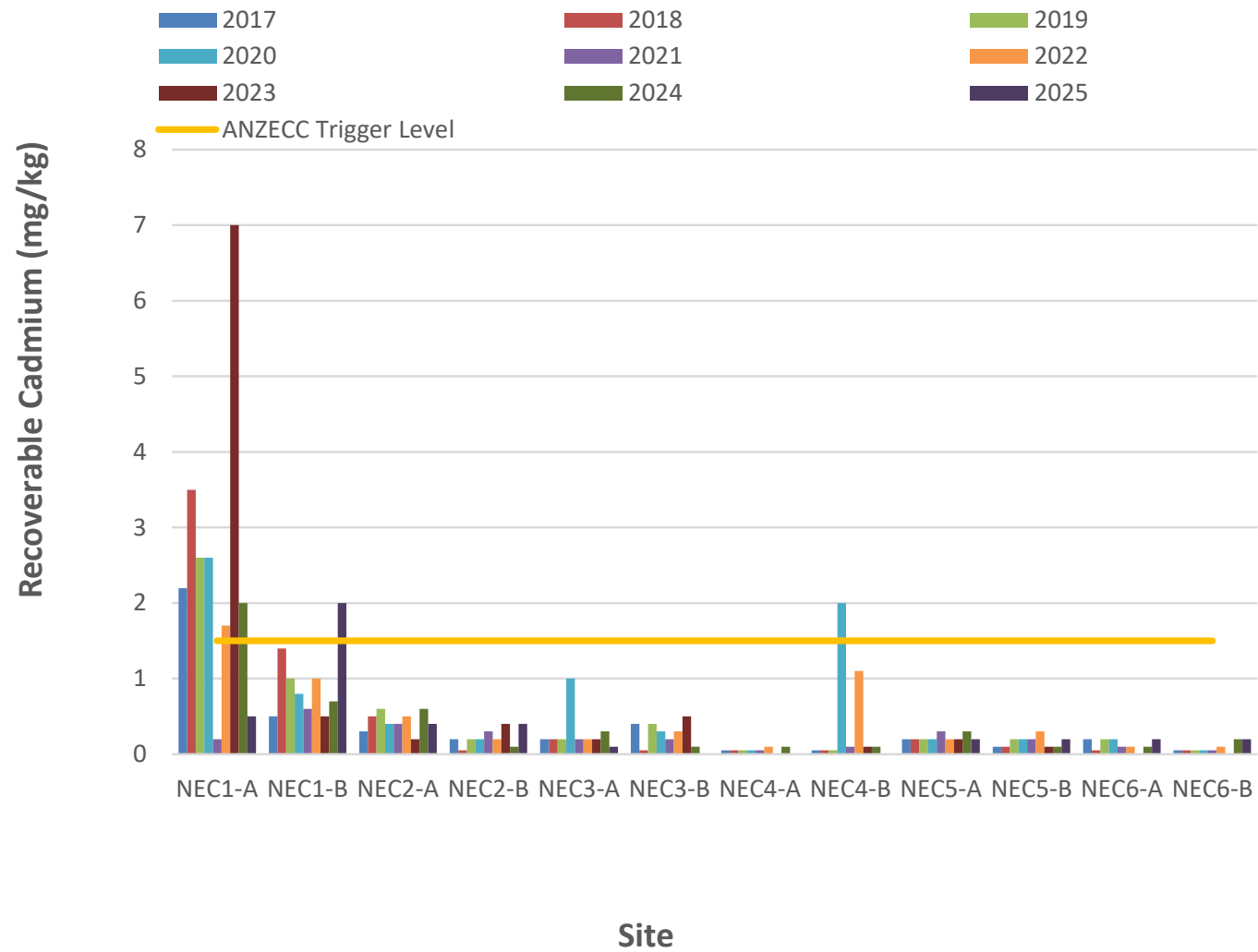
Appendix C. North East Creek investigation data and graphs

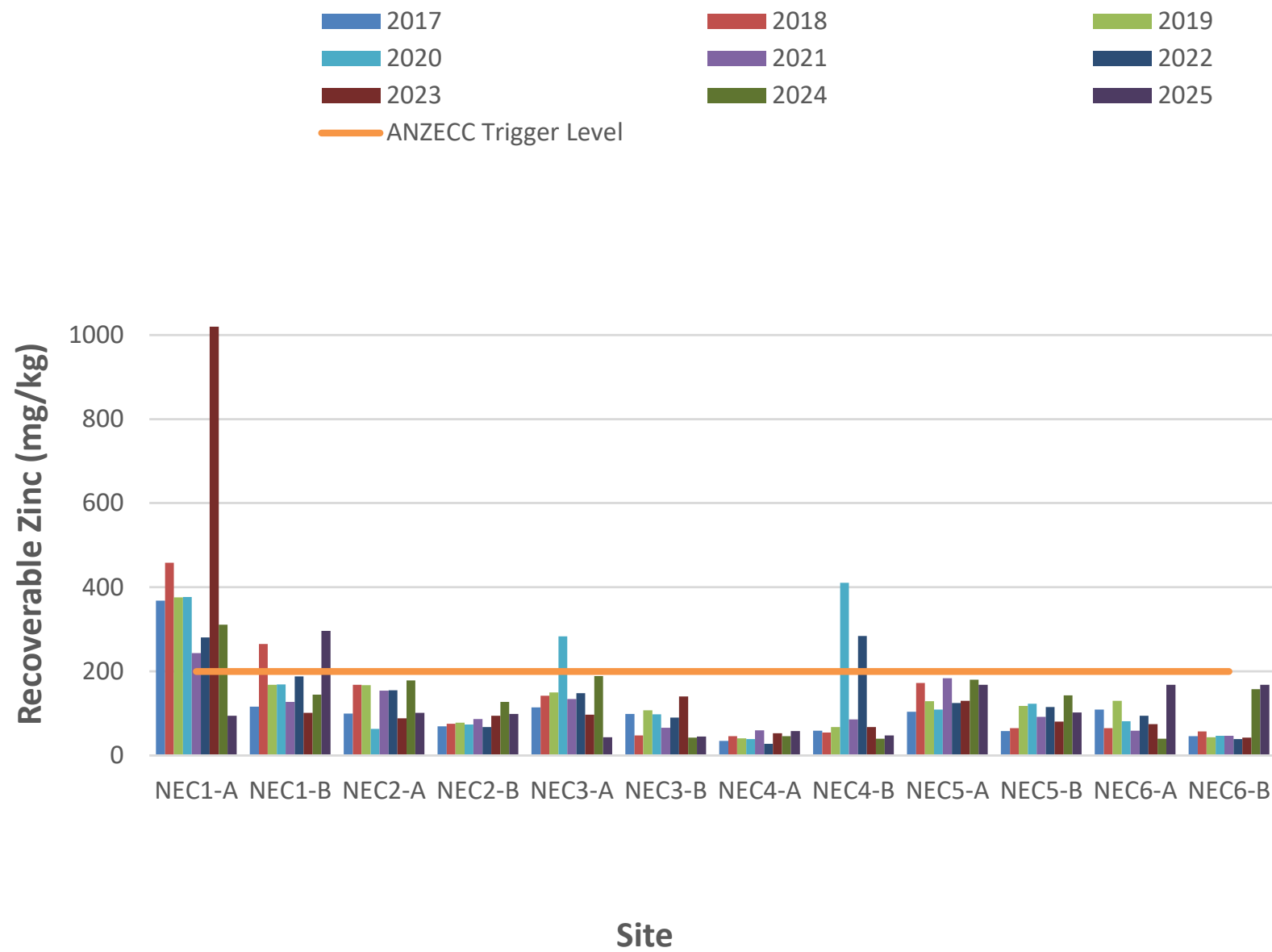
APPENDIX C- NEC SEDIMENTS

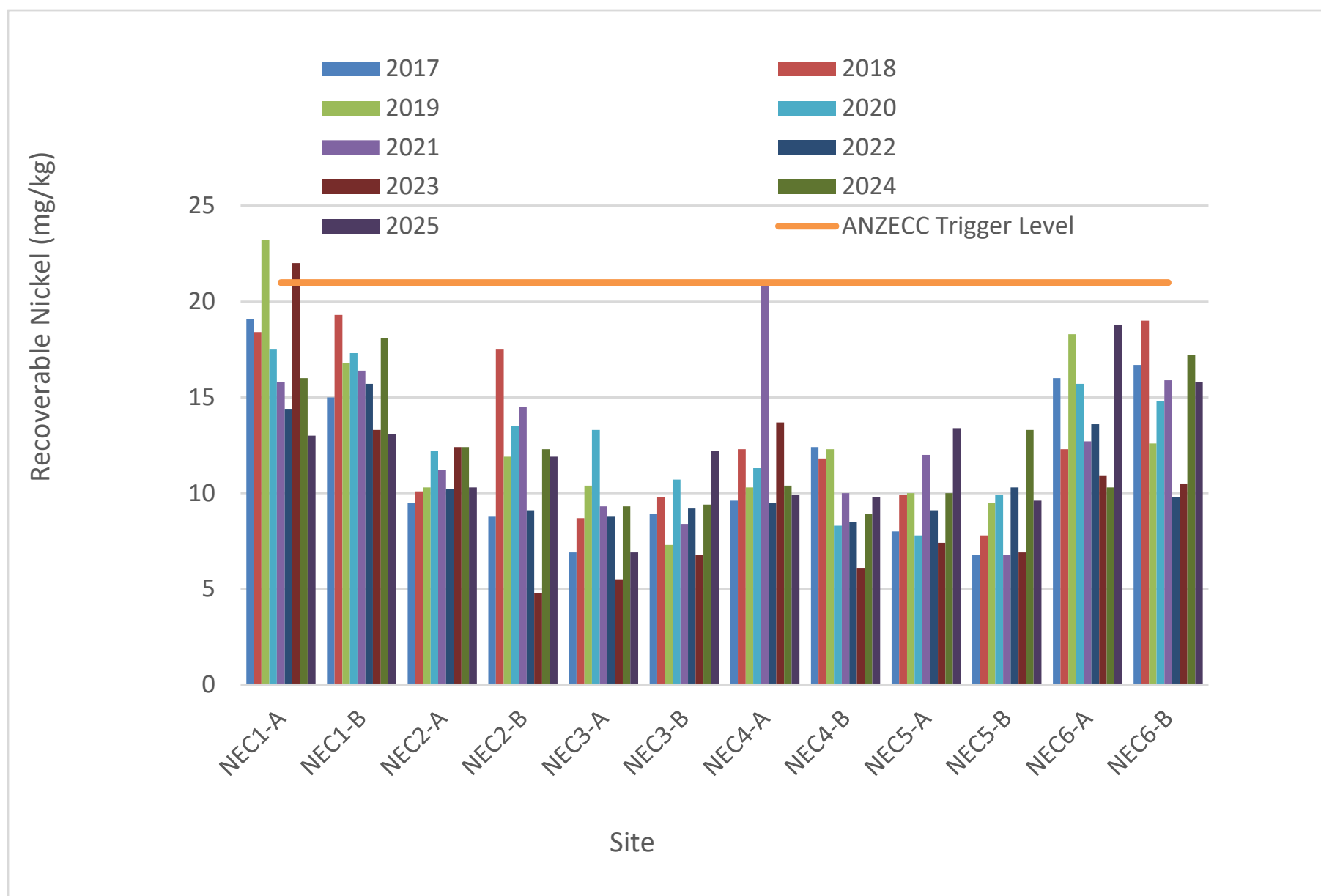
Analyte	NEC1-A	NEC1-B	NEC2-A	NEC2-B	NEC3-A	NEC3-B	NEC4-A	NEC4-B	NEC5-A	NEC5-B	NEC6-A	NEC6-B	Trigger level	High value
Cadmium (mg/kg)	0.5	2	0.4	0.4	0.1	<0.1	<0.1	<0.1	0.2	0.2	0.2	0.2	1.5	10
Chromium (mg/kg)	25	25.1	19.1	18.3	8.3	12.7	12.9	13.8	25.5	18.6	42.8	32.7	80	370
Copper (mg/kg)	8.9	11.4	8.5	10.1	4.7	6.7	5.7	5.7	10.6	8	10.5	9	65	270
Lead (mg/kg)	6.9	9.9	6.3	7.6	4.2	6.4	6.3	5.7	7.7	7.7	8.9	7.8	50	220
Nickel (mg/kg)	13	13.1	10.3	11.9	6.9	12.2	9.9	9.8	13.4	9.6	18.8	15.8	21	52
Zinc (mg/kg)	94.4	296	101	98.3	43.5	44.9	58.2	48	168	102	168	168	200	410
Extractable Mercury (mg/kg)	0.02	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Recoverable Mercury (FIMS) (mg/kg)	0.09	0.22	0.08	0.05	0.05	0.02	0.03	0.02	0.27	0.13	0.15	0.13	0.15	1
Methyl Mercury (mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Sum of BTEX (mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
Sum of TPH	46	269	69	50	105	52	43	22	160	337	286	258	-	-
TOC	4.93	6.75	3	1.73	1.88	1.07	1.34	1.16	5.15	5.5	3.88	2.3	-	-
Sum of TPH(Normalised tp 1%TOC)	9.3	39.9	23.0	28.9	55.9	48.6	32.1	19.0	31.1	61.3	73.7	112.2	280.0	550.0

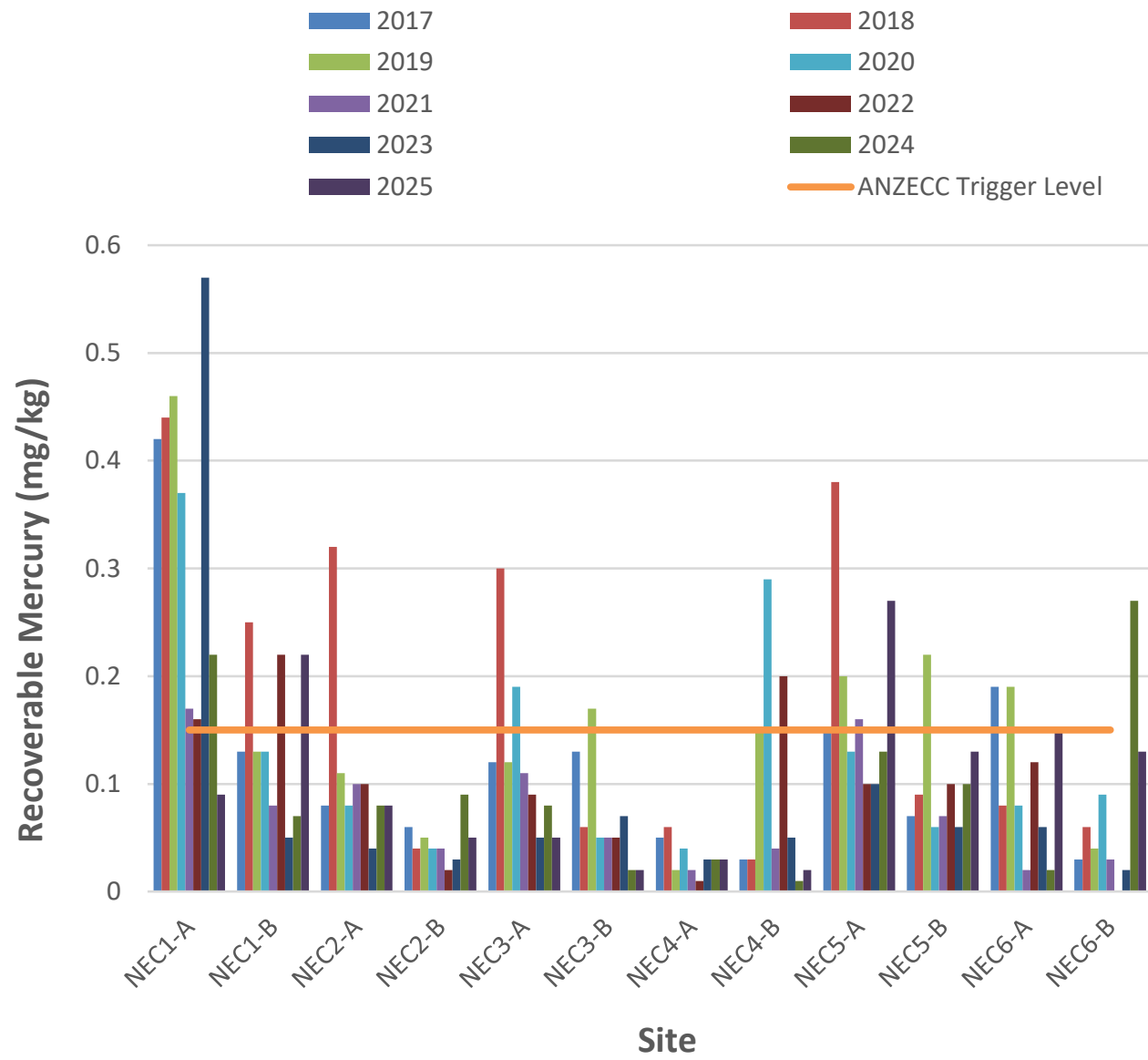


Metals Exceedances









Appendix D. Biota- Oyster data and graphs

APPENDIX D-BIOTA:OYSTERS

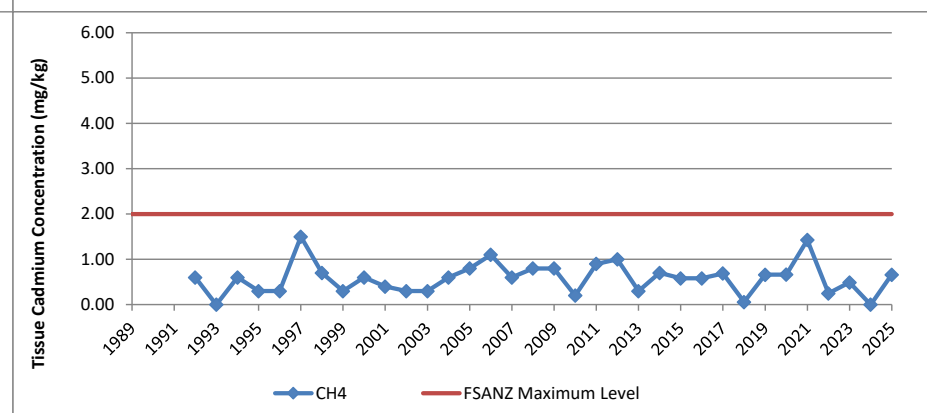
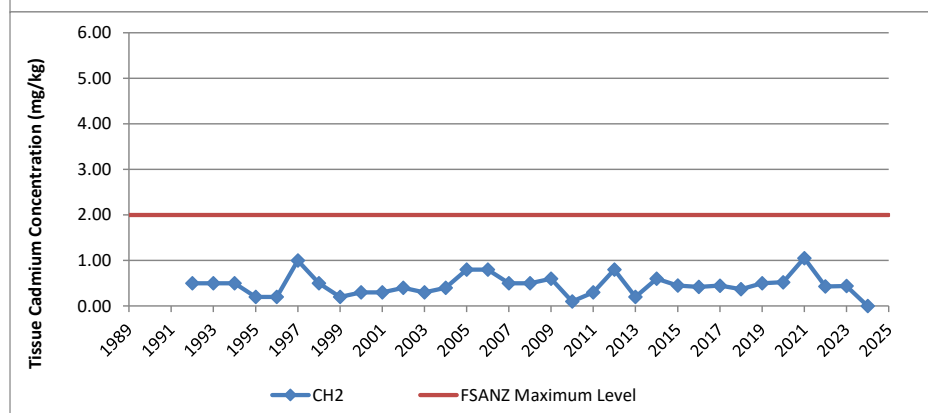
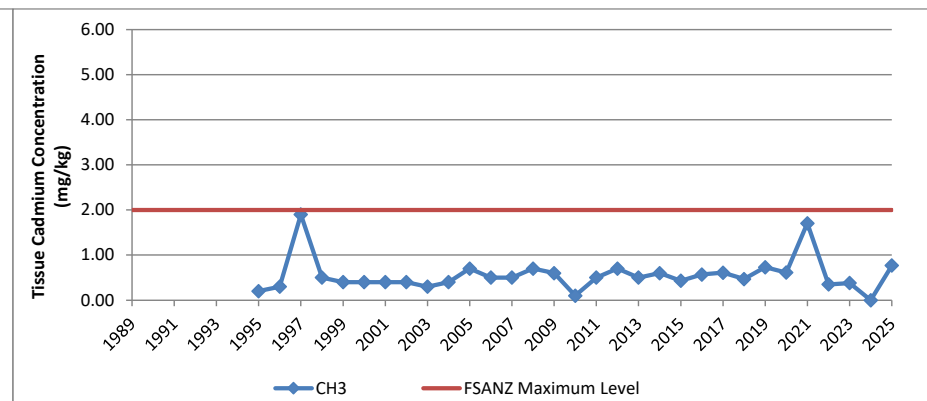
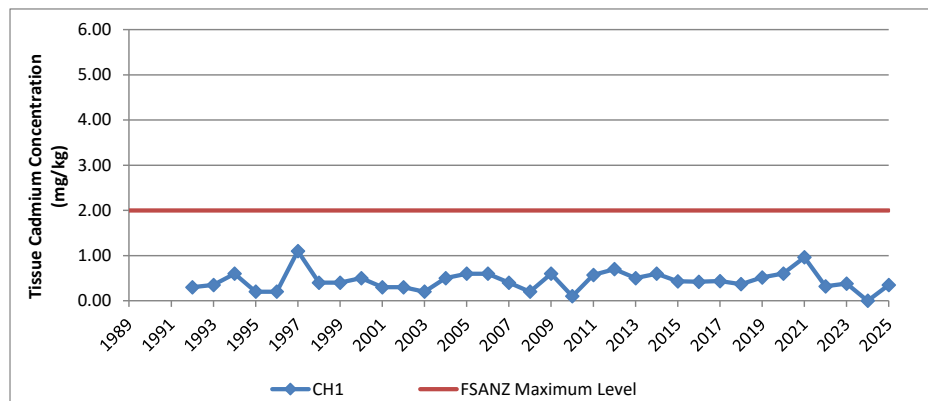
Cadmium

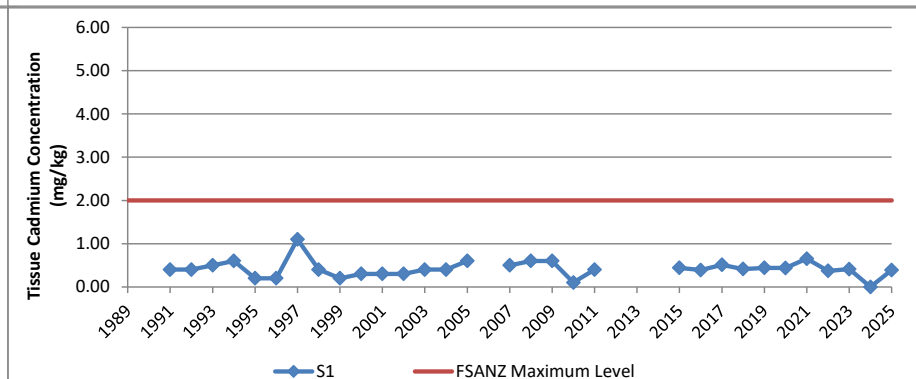
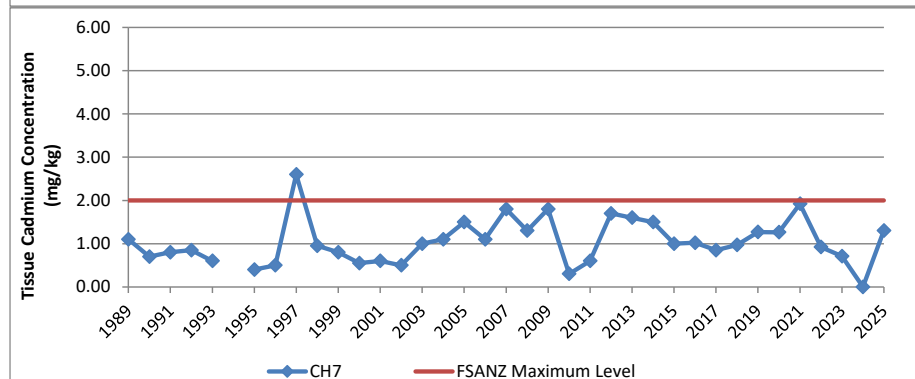
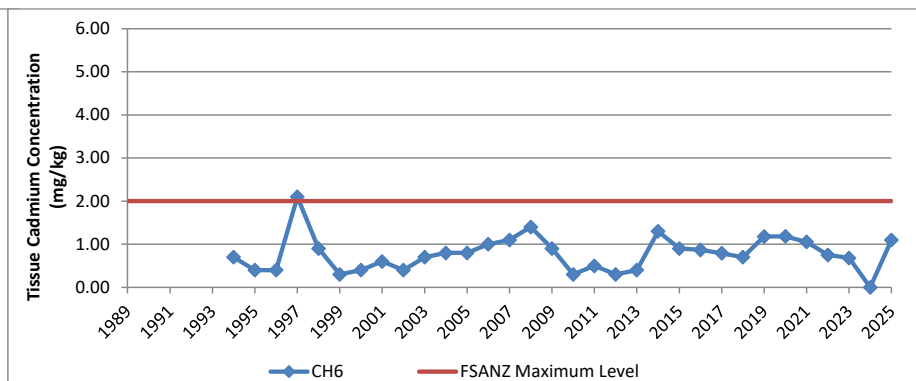
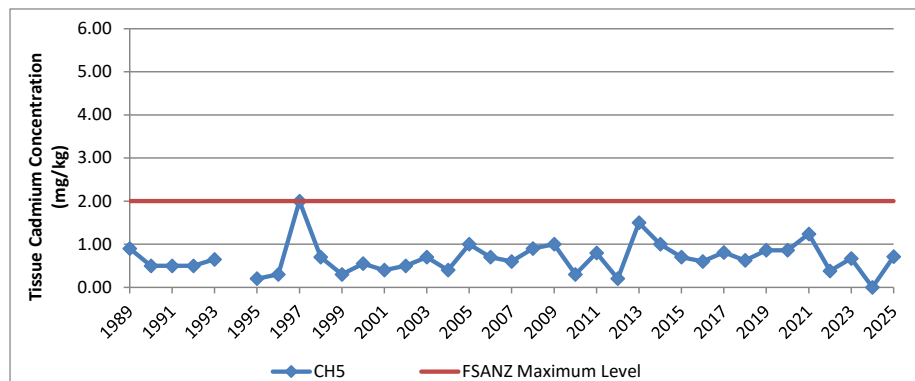
Site	Cadmium (mg/kg wet weight)																																					
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CH1	NA	NA	NA	NA	0.30	0.3-0.4	0.60	0.20	0.20	1.10	0.40	0.40	0.50	0.30	0.30	0.20	0.50	0.60	0.60	0.40	0.20	0.60	0.10	0.57/0.6b	0.70	0.50	0.60	0.43	0.42	0.44	0.37	0.52	0.60	0.96	0.32	0.38	0.41	0.35
CH2	NA	NA	NA	NA	0.50	0.50	0.50	0.20	0.20	1.00	0.50	0.20	0.30	0.30	0.40	0.30	0.40	0.80	0.80	0.50	0.50	0.60	0.10	0.30	0.80	0.20	0.60	0.45	0.42	0.45	0.37	0.50	0.52	1.05	0.43	0.44	0.46	0.38
CH3	NA	NA	NA	NA	NA	NA	NA	0.20	0.30	1.90	0.50	0.40	0.40	0.40	0.40	0.30	0.40	0.70	0.5/0.5b	0.50	0.70	0.60	0.10	0.50	0.70	0.50	0.60	0.43	0.57	0.61	0.47	0.73	0.06	1.71	0.35	0.38	0.71	0.77
CH3a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.90	NA	NA	NA	NA	NA	NA	NA	0.54	NA	NA	NA	NA	NA	NA	NA	NA	
CH4	NA	NA	NA	NA	0.60	NA	0.60	0.30	0.30	1.50	0.7/0.8a	0.30	0.60	0.40	0.30	0.30	0.60	0.8/0.7a	1.10	0.60	0.80	0.80	0.20	0.90	1.00	0.30	0.70	0.58	0.58	0.69	0.06	0.66	0.66	1.43	0.25	0.49	0.66	0.66
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.90	NA	NA	NA	NA	<0.1	NA	0.59	0.56	0.78	0.56	0.72	0.72	1.15	0.35	0.39	0.69	0.63
CH5	NA	0.90	0.50	0.4-0.6	0.4-0.6	0.6-0.7	NA	0.20	0.30	2.00	0.70	0.3-0.6d	0.3-0.8	0.40	0.50	0.70	0.40	1.00	0.70	0.60	0.90	1.00	0.30	0.80	0.20	1.50	1.00	0.70	0.60	0.81	0.62	0.86	0.86	1.24	0.38	0.67	0.88	0.71
CH5a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4/0.5b	0.60	0.50	0.60	NA	0.70	0.70	NA	NA	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH6	NA	NA	NA	NA	NA	NA	0.70	0.40	0.40	2.10	0.90	0.30	0.40	0.6/0.5b	0.40	0.70	0.8/0.8a	0.8/0.7b	1.00	1.10	1.40	0.90	0.30	0.50	0.30	0.40	1.30	0.90	0.87	0.79	0.70	1.18	1.18	1.05	0.25	0.68	1.10	1.1
CH6a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.27	1.27	NA	NA	NA	NA	NA
CH7	0.80	1.10	0.70	0.7-0.9	0.8-0.9	0.4-0.8	NA	0.40	0.50	2.60	0.9-1.0	0.3-1.3	0.4-0.7	0.60	0.50	1.00	1.1/0.9b	1.50	1.10	1.80	1.30	1.80	0.30	0.60	1.70	1.60	1.50	1.00	1.02	0.85	0.97	1.26	1.26	1.92	0.92	0.71	0.93	1.3
CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.80	0.6/0.8b	0.70	NA	1.50	1.00	NA	NA	1.50	NA	1.00	1.50	0.90	1.90	NA	NA	0.81	0.98	NA	NA	1.74	0.84	0.67	1.00	1.1
S1	NA	NA	NA	0.40	0.40	0.4-0.6	0.60	0.20	0.20	1.10	0.40	0.20	0.30	0.30	0.30	0.40	0.40	0.60	NA	0.50	0.60	0.60	0.10	0.40	NA	NA	NA	0.44	0.39	0.51	0.41	0.44	0.44	0.65	0.37	0.41	0.40	0.39
S5	NA	NA	NA	0.40	0.40	0.50	0.60	0.20	0.40	1.60	0.40	0.30	0.30	0.30	0.30	0.30	0.60	0.70	0.60	0.60	0.70	0.70	0.10	0.50	NA	NA	NA	0.64	0.52	0.51	0.52	0.64	0.64	0.68	0.43	0.52	0.48	0.5
S7	NA	NA	NA	0.40	0.30	0.5-0.6	0.70	0.30	0.20	1.80	0.40	0.20	0.40	0.20	0.40	0.30	0.50	0.7/0.6b	0.70	0.40	0.80	0.60	0.20	0.48/0.54a	NA	NA	NA	0.58	0.45	0.50	0.45	0.57	0.57	0.68	0.53	0.51	0.49	0.48
S8	NA	NA	NA	NA	0.40	0.4-0.6	NA	0.20	0.20	1.20	0.60	0.30	0.30	0.30	0.30	0.4/0.4b	0.60	0.80	0.50	0.50	0.60	0.50	0.20	0.50	NA	NA	NA	0.78	0.48	0.53	0.47	0.60	0.60	0.99	0.52	0.68	0.50	0.49
DO1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
DO2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50	0.50	0.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S8b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
R20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
R21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH7 REF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.40	3.70	NA	3.30	3.50	3.20	2.60	3.30	2.90	3.70	3.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.68	0.83	1.17	1.17	1.30	1.40	0.58	0.81	0.85
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.90	1.41	1.40	1.40	3.72	1.40	1.5	1.80	2.5
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.91	0.76	1.65	1.65	1.58	0.88	1.1	1.70	1.2
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.04	1.14	2.35	2.35	2.26	0.67	1.3	1.40	1.2

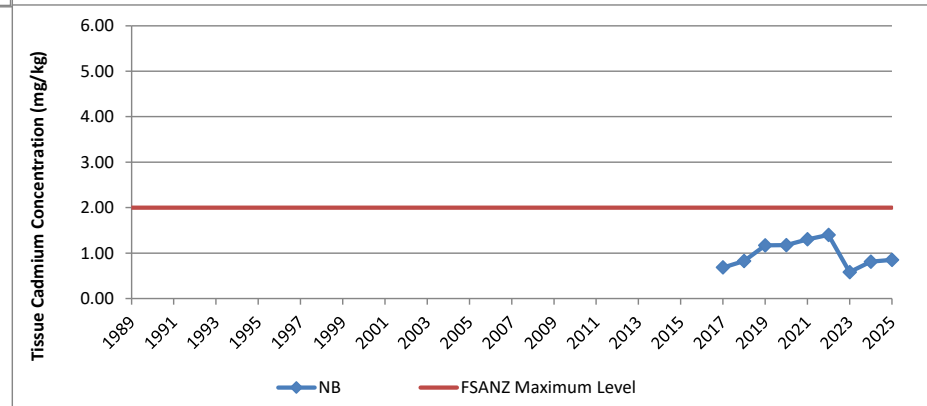
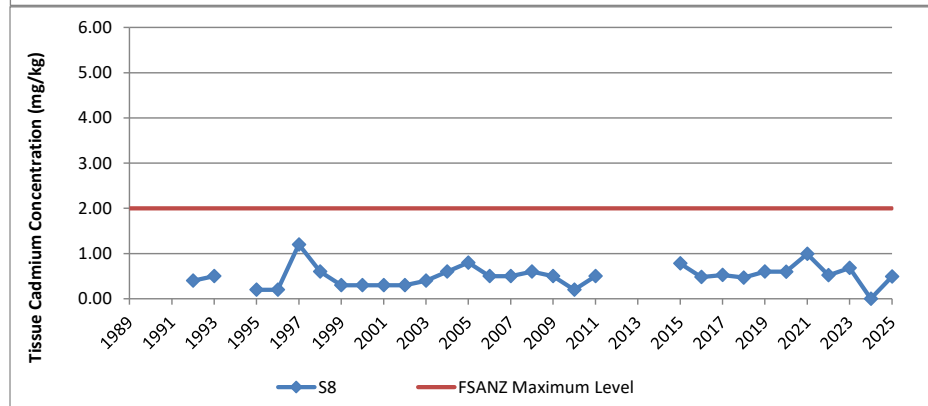
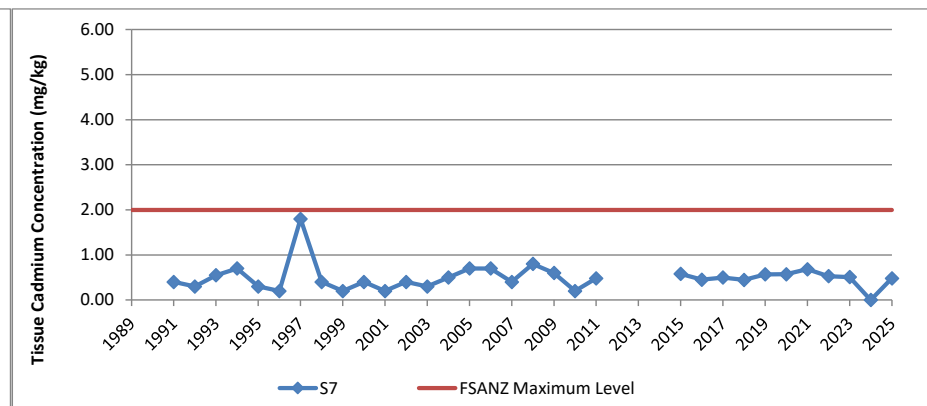
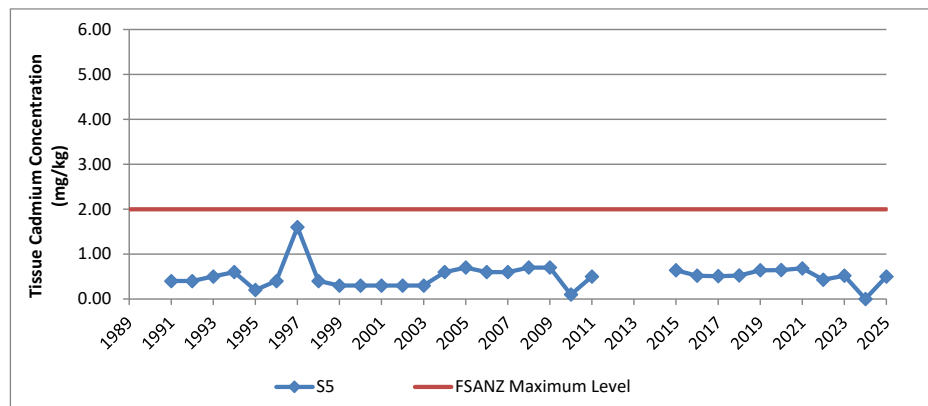
Guideline Exceedences

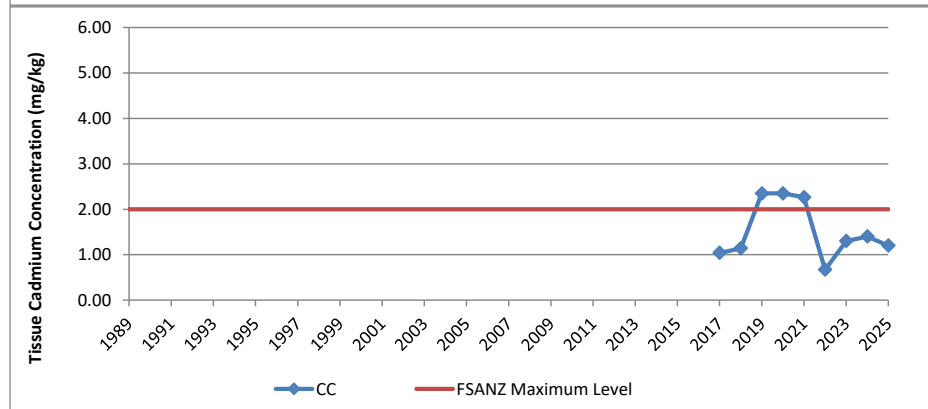
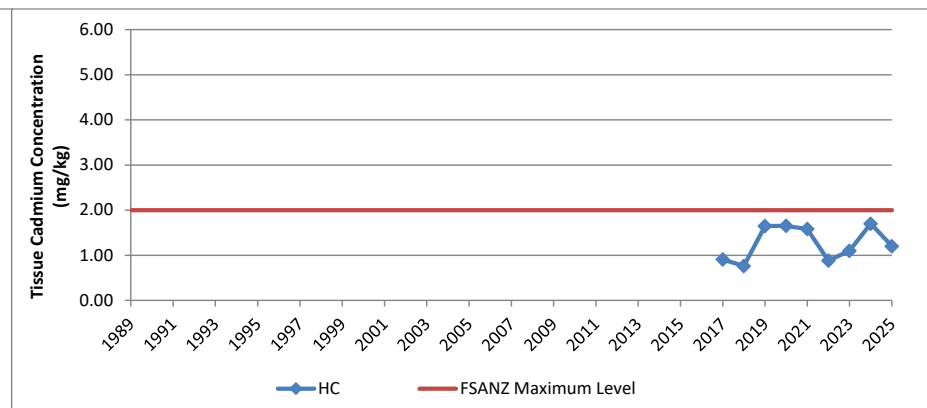
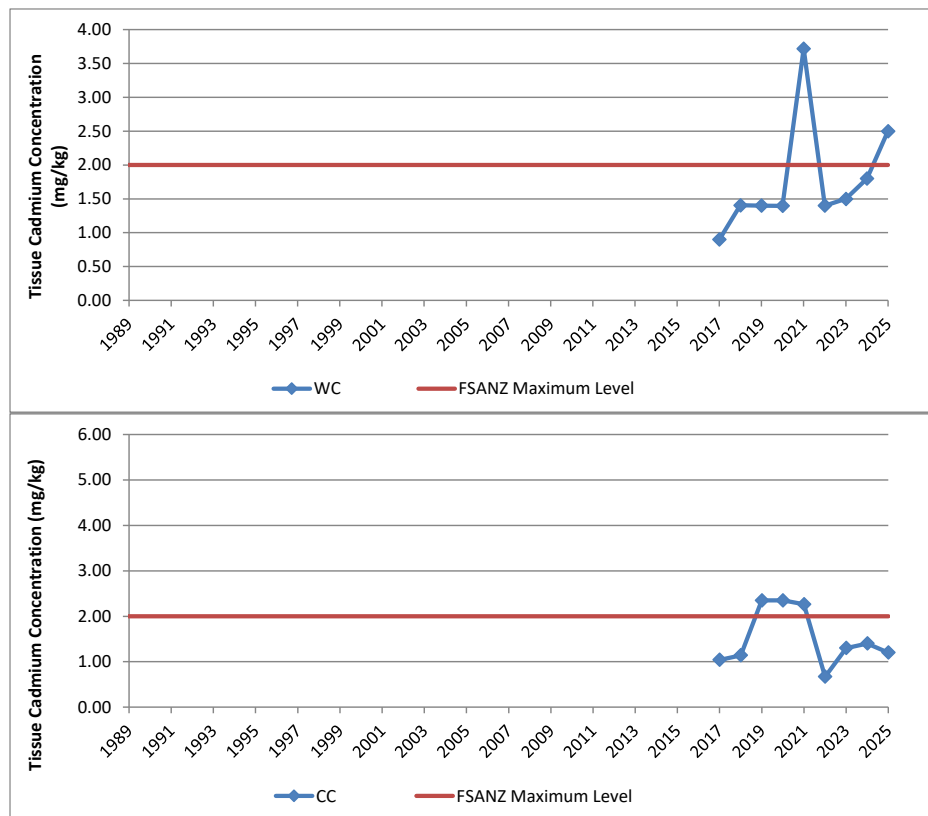
Not Sampled

Half the LOR









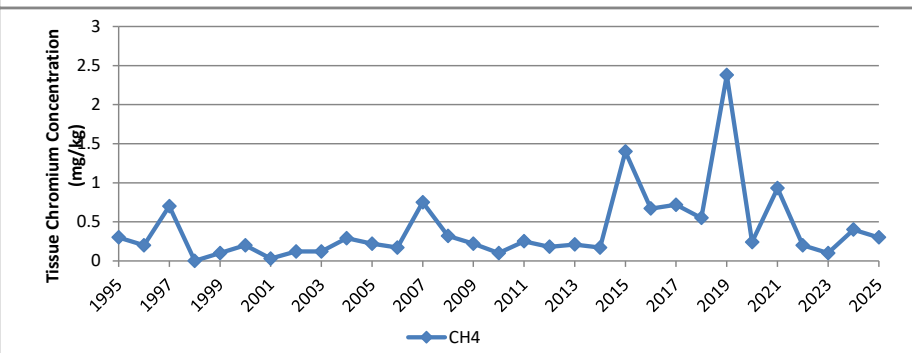
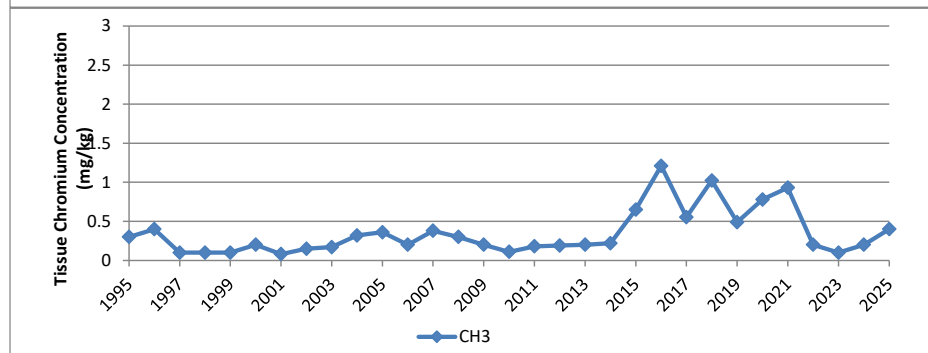
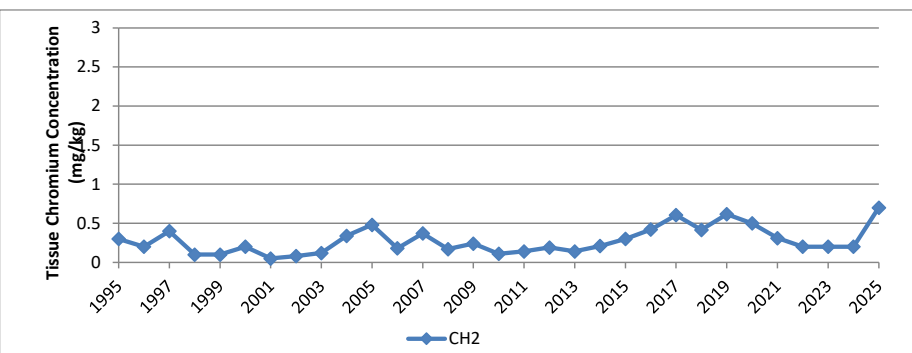
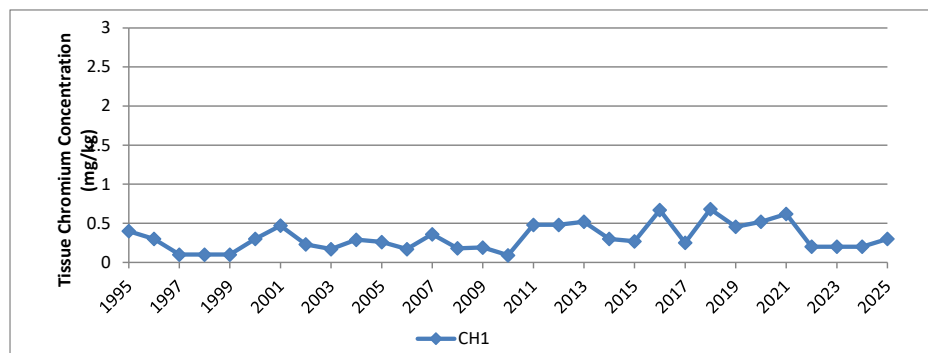
Chromium

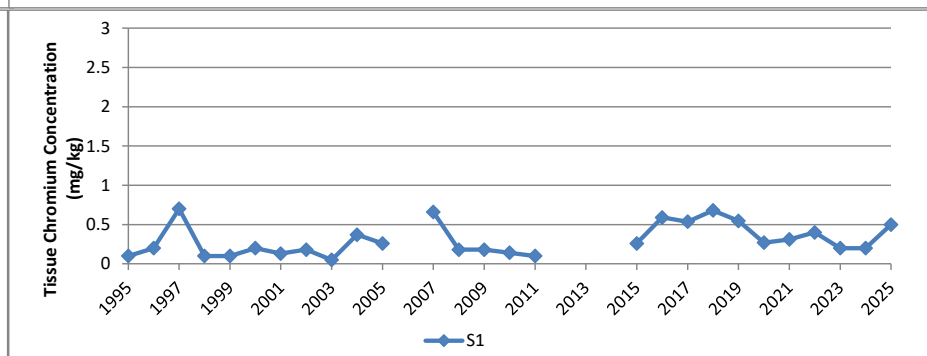
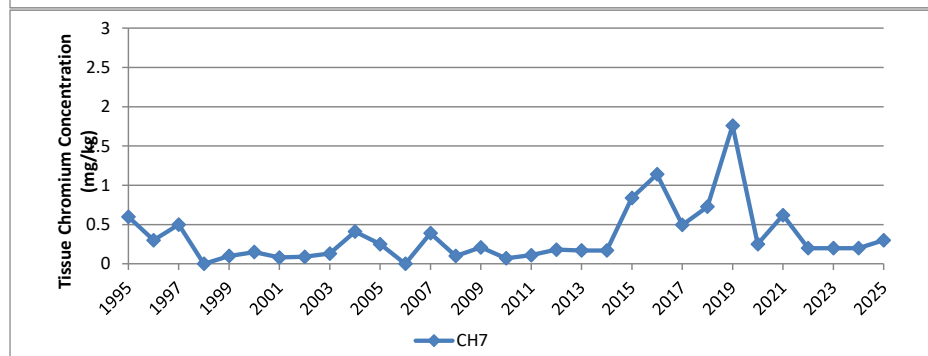
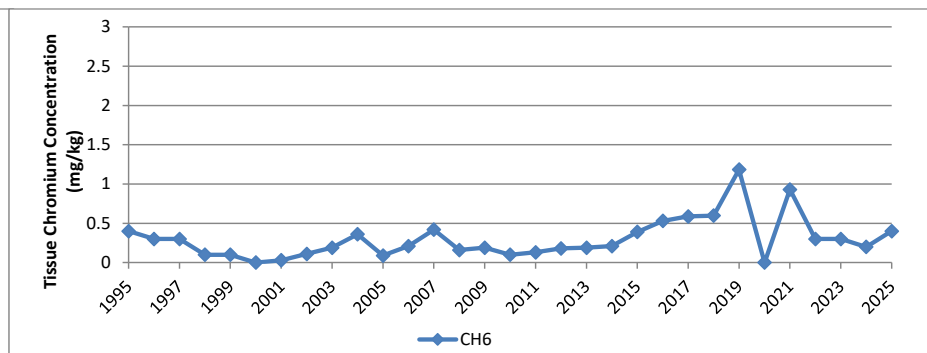
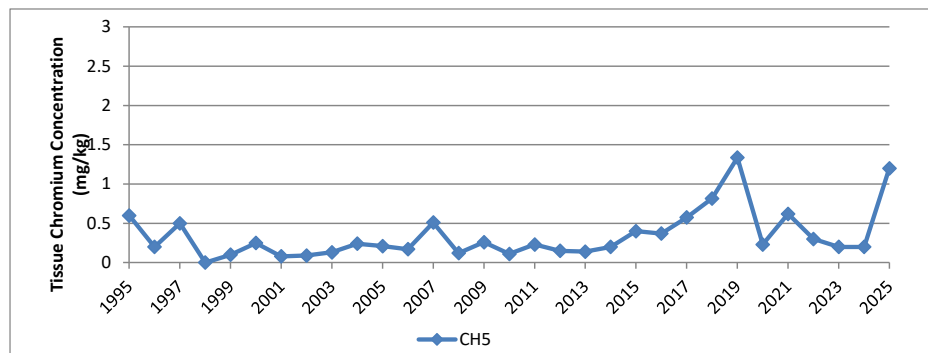
Site	Chromium (mg/kg wet weight)																														
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CH1	0.4	0.3	0.1	0.1	0.1	0.3	0.47	0.23	0.17	0.29	0.26	0.17	0.36	0.18	0.19	0.09	0.48/0.39b	0.48	0.52	0.3	0.27	0.67	0.25088	0.6812	0.46	0.52	0.62	0.2	0.2	0.2	0.3
CH2	0.3	0.2	0.4	0.1	0.1	0.2	0.05	0.08	0.12	0.34	0.48	0.18	0.37	0.17	0.24	0.11	0.14	0.19	0.14	0.21	0.3	0.42	0.6049	0.4158	0.62	0.5	0.31	0.2	0.2	0.2	0.7
CH3	0.3	0.4	0.1	0.1	0.1	0.2	0.08	0.15	0.17	0.32	0.36	0.2/0.34b	0.38	0.3	0.2	0.11	0.18	0.19	0.2	0.22	0.65	1.21	0.554	1.022	0.49	0.78	0.93	0.2	0.1	0.2	0.4
CH3a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.17	NA	NA	NA	NA	NA	NA	NA	0.82	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH4	0.3	0.2	0.7	0.1-0.3	0.1	0.2	0.03	0.12	0.12	0.29	0.22	0.17	0.75	0.32	0.22	0.1	0.25	0.18	0.21	0.17	1.4	0.67	0.7175	0.5496	2.38	0.24	0.93	0.2	0.1	0.4	0.3
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.18	NA	NA	NA	NA	NA	NA	NA	0.22	NA	1.3	0.41	0.4301	1.2584	0.32	NA	0.31	0.2	0.2	0.5	1.5
CH5	0.6	0.2	0.5	0.1-0.3	0.1	0.2-0.3	0.08	0.09	0.13	0.24	0.21	0.17	0.51	0.12	0.26	0.11	0.23	0.15	0.14	0.2	0.4	0.37	0.5742	0.816	1.34	0.23	0.62	0.3	0.3	0.2	1.2
CH5a	NA	NA	NA	NA	NA	NA	0.05/0.03b	0.06	0.13	0.4	NA	<0.15	0.52	NA	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3408	NA	NA	NA	NA	NA
CH6	0.4	0.3	0.3	0.1	0.1	<0.1	0.03/0.05b	0.11	0.19	0.36	0.09/0.09b	0.21	0.42	0.16	0.19	0.1	0.13	0.18	0.19	0.21	0.39	0.53	0.5876	0.5974	1.18	NA	0.93	0.3	0.2	0.2	0.4
CH7	0.6	0.3	0.5	0.2-0.6	0.1	0.1-0.2	0.08	0.09	0.13	0.41	0.25	<0.13	0.39	0.1	0.21	0.07	0.11	0.18	0.17	0.17	0.84	1.14	0.4956	0.7263	1.76	0.25	0.62	0.2	0.2	0.2	0.3
CH7a	NA	NA	NA	NA	NA	NA	0.05	0.16/0.12b	0.11	NA	0.27	<0.13	NA	NA	0.22	NA	0.13	0.31	0.37	0.25	NA	NA	0.3904	0.4	0.97	NA	0.62	0.3	0.1	0.2	0.4
CH7b	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S1	0.1	0.2	0.7	0.1	0.1	0.2	0.13	0.18	0.05	0.37	0.26	NA	0.66	0.18	0.18	0.14	0.1	NA	NA	NA	0.26	0.59	0.536	0.6804	0.55	0.27	0.31	0.4	0.2	0.2	0.5
S5	0.4	0.6	0.3	0.1	0.1	0.2	0.05	0.16	0.14	0.36	0.31	<0.14	0.41	0.2	0.11	0.11	0.1	NA	NA	NA	0.53	0.43	0.254	0.5229	0.64	0.63	0.5	1.1	0.2	0.3	0.4
S7	0.7	0.2	0.6	0.1	0.1	0.3	0.16	0.16	0.15	0.44	0.29/0.26b	<0.13	0.57	1.51	0.13	0.11	0.1/0.11a	NA	NA	NA	0.62	0.45	0.275	0.496	0.93	0.17	0.62	0.5	0.2	0.2	0.3
S8	0.6	0.1	0.8	0.1	0.1	0.2	0.23	0.2	0.13/0.13b	0.31	0.28	<0.13	0.55	0.15	0.09	0.11	0.15	NA	NA	NA	0.23	0.43	0.18403	0.3122	0.57	1.68	0.31	0.3	0.3	0.2	0.3
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.56	0.14	0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7 REF	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.8	1.20/1.10d	NA	1.3	0.8	1	0.9	1	1.1	1.3	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.465	0.7552	2.13	0.31	1.24	0.4	0.5	0.3	0.6
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.05	0.8032	0.74	1.58	0.62	0.3	0.5	0.3	0.5
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3528	1.3413	0.95	0.83	1.86	0.3	0.4	0.3	0.3
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.562	0.741	0.99	0.29	0.62	0.3	0.3	0.2	0.7

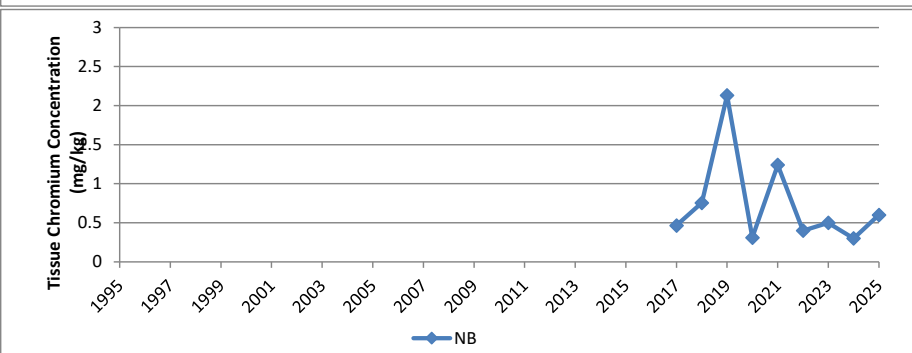
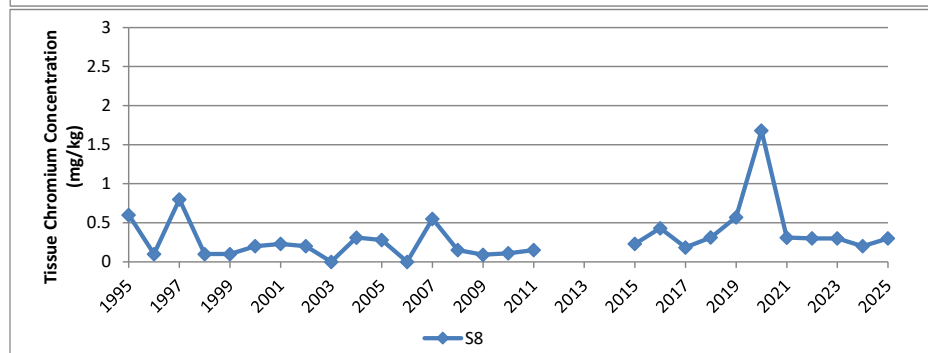
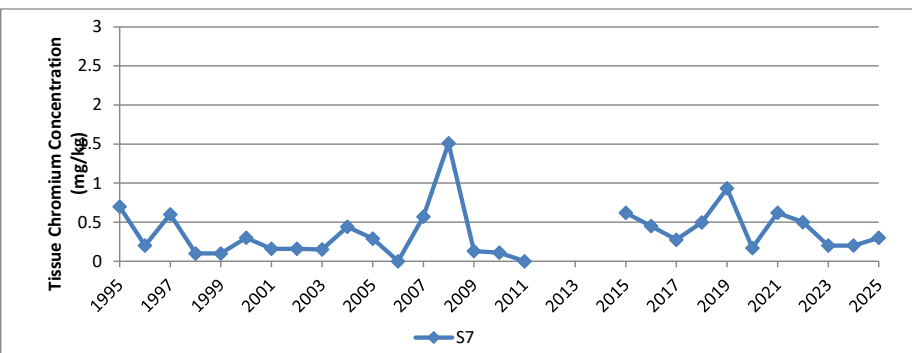
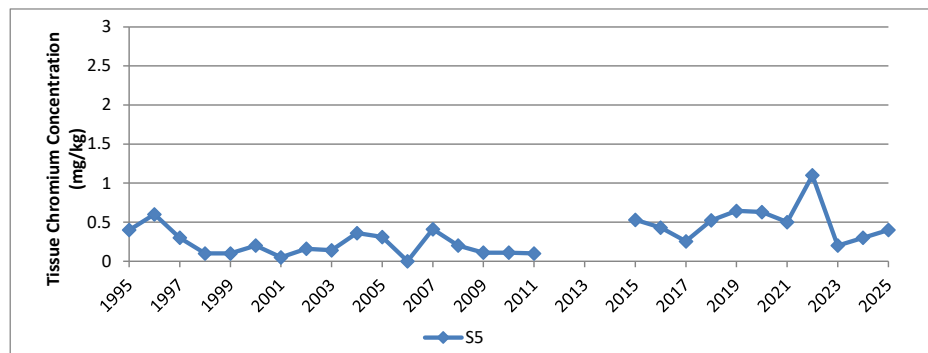
Guideline Exceedences

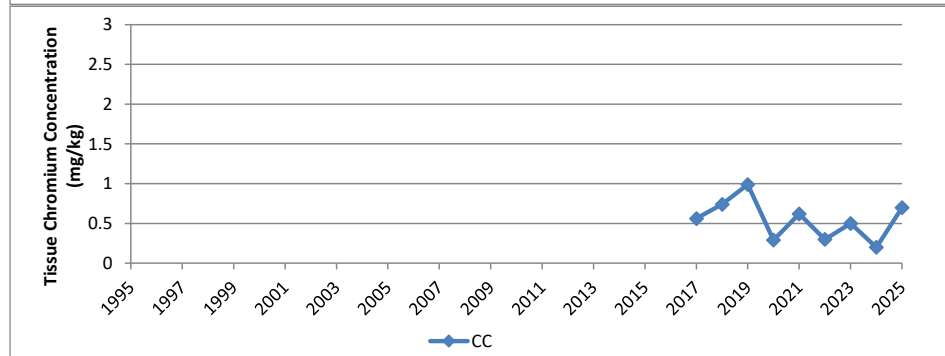
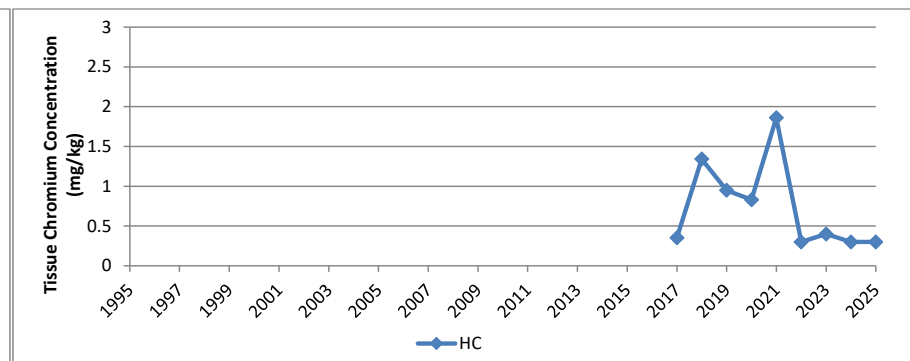
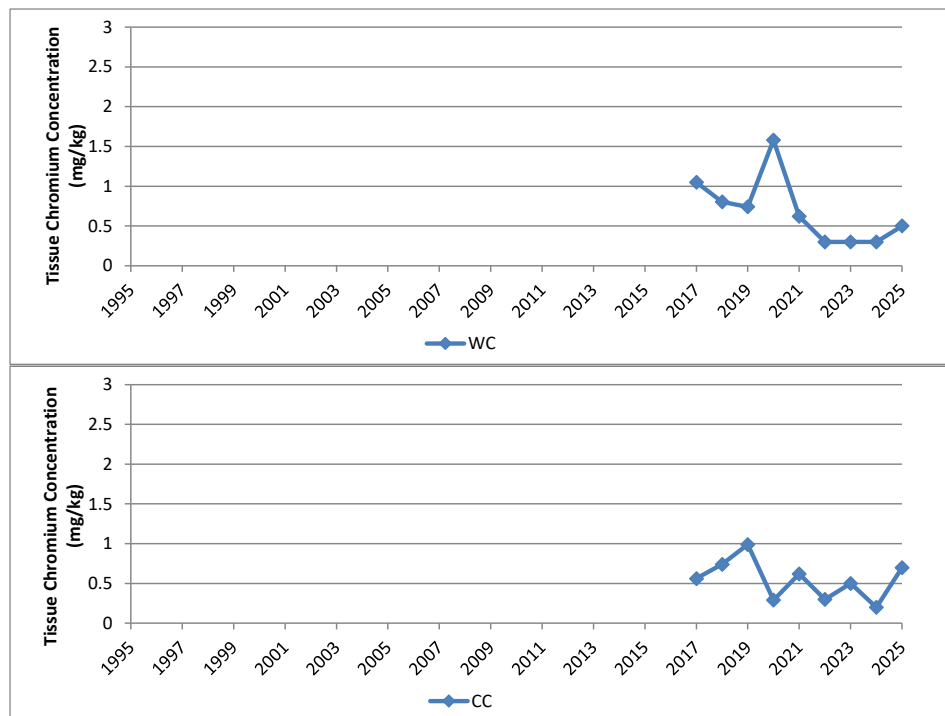
Not Sampled

Half the LOR





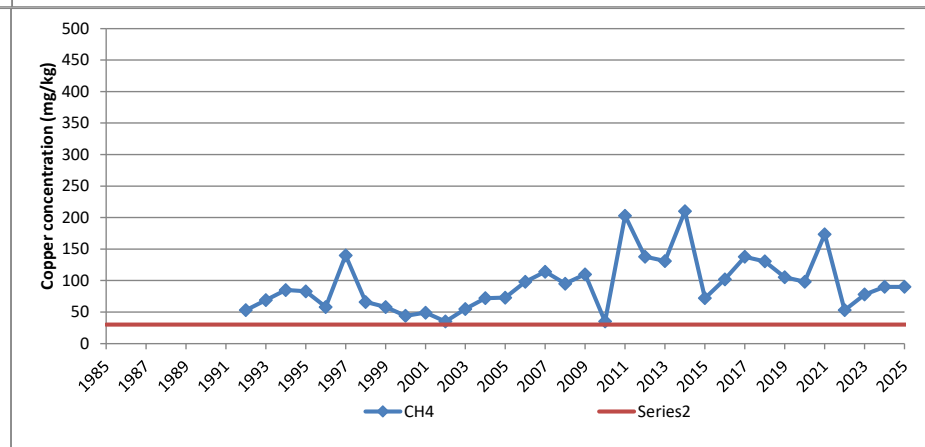
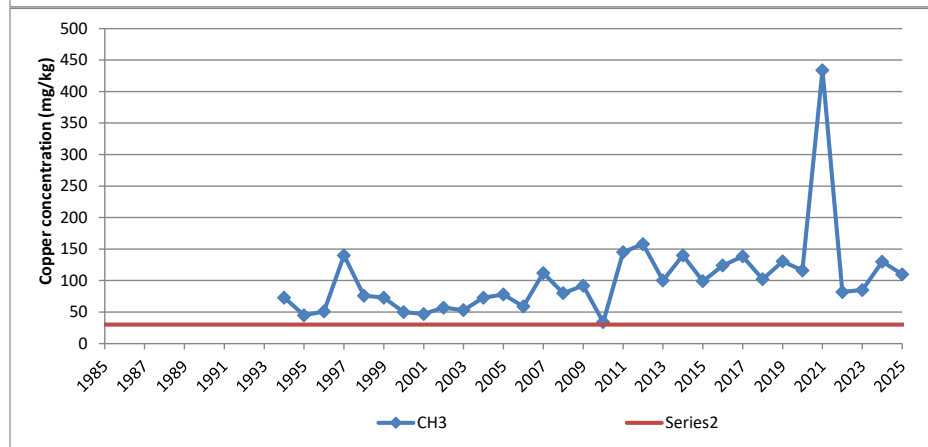
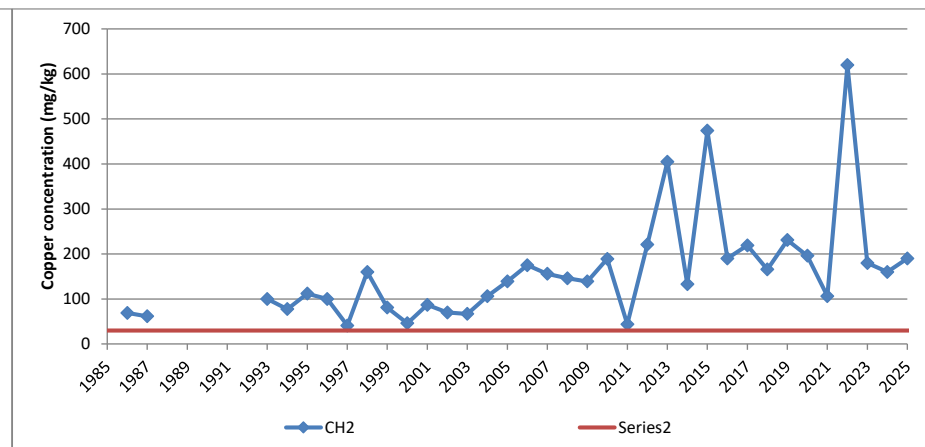
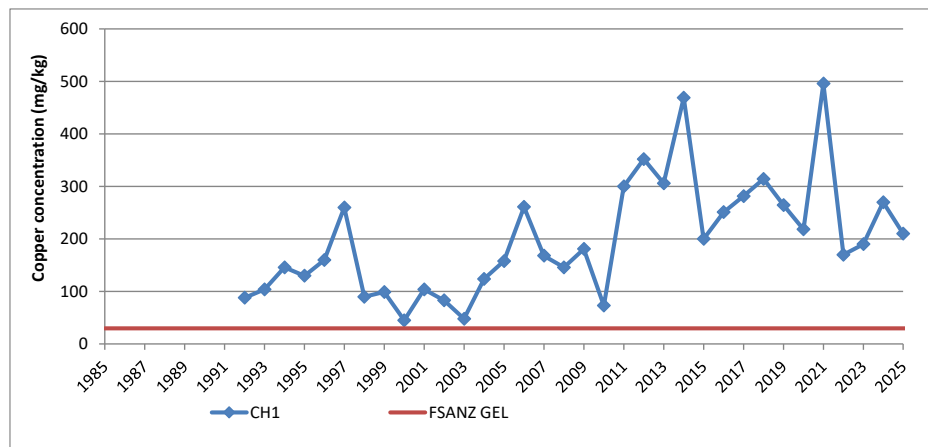


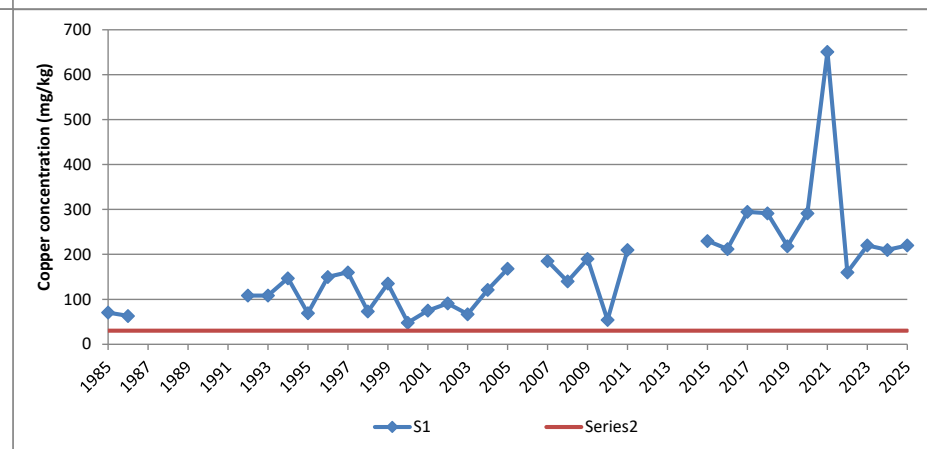
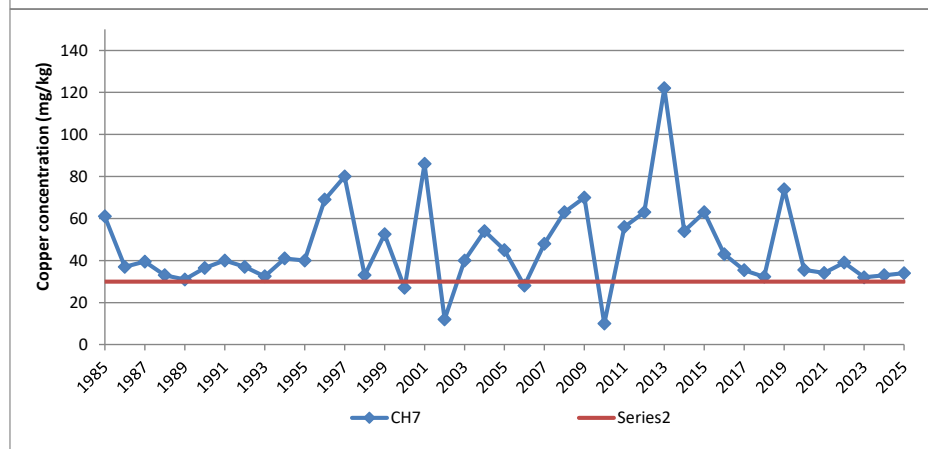
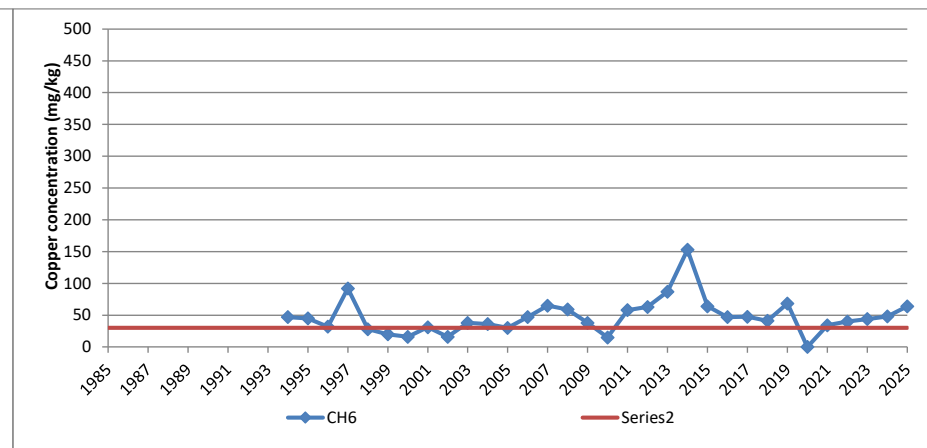
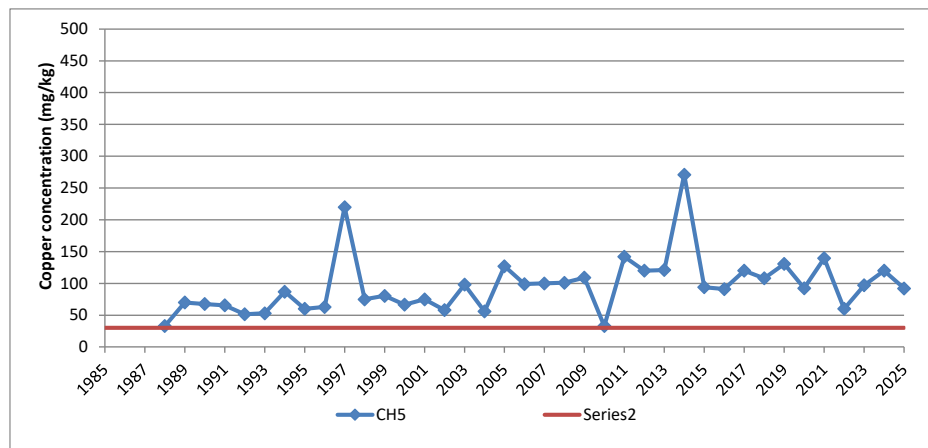


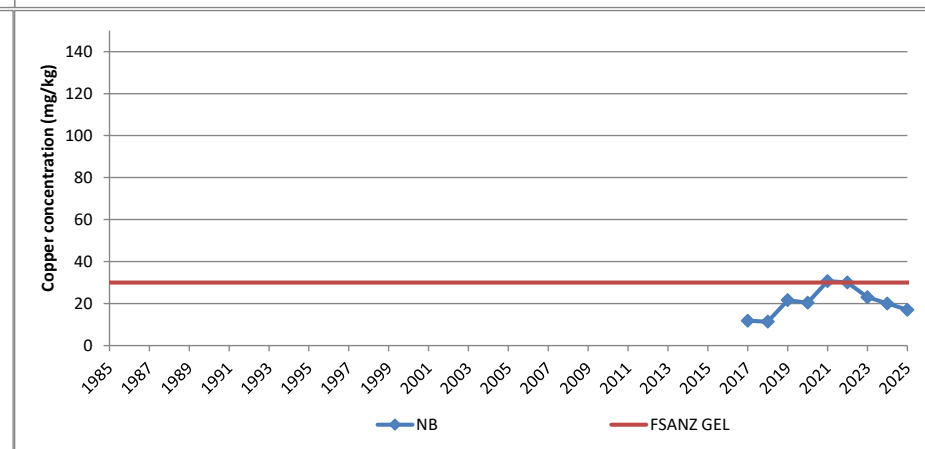
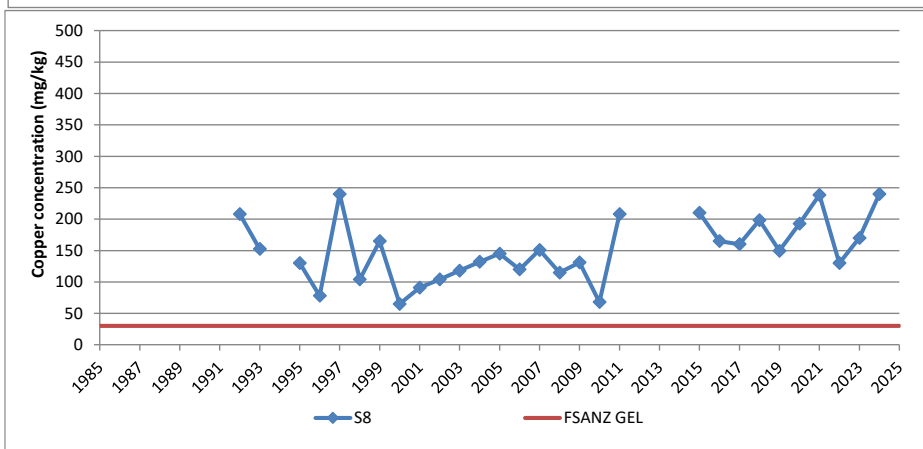
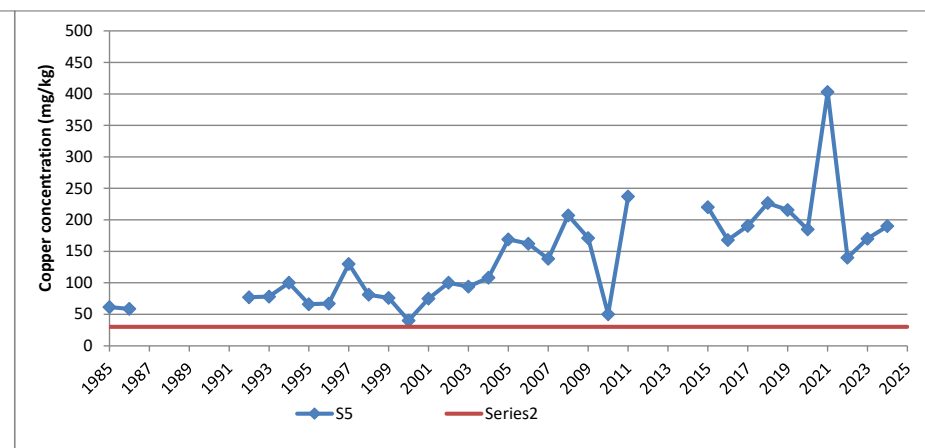
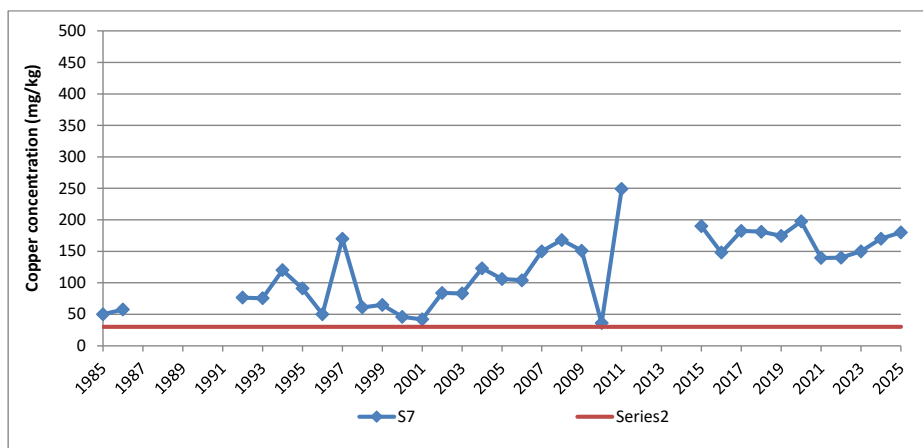
Copper

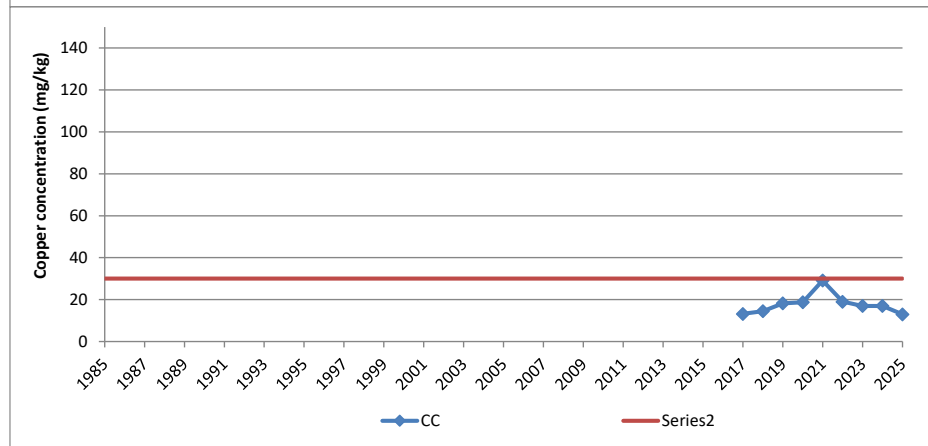
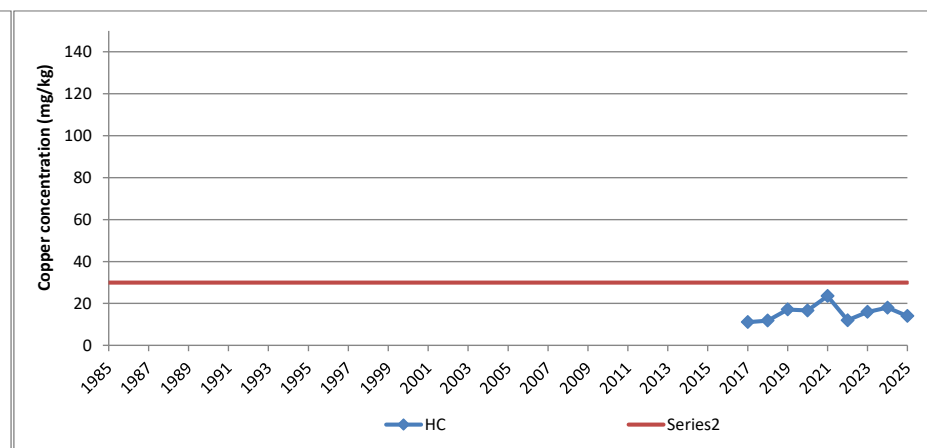
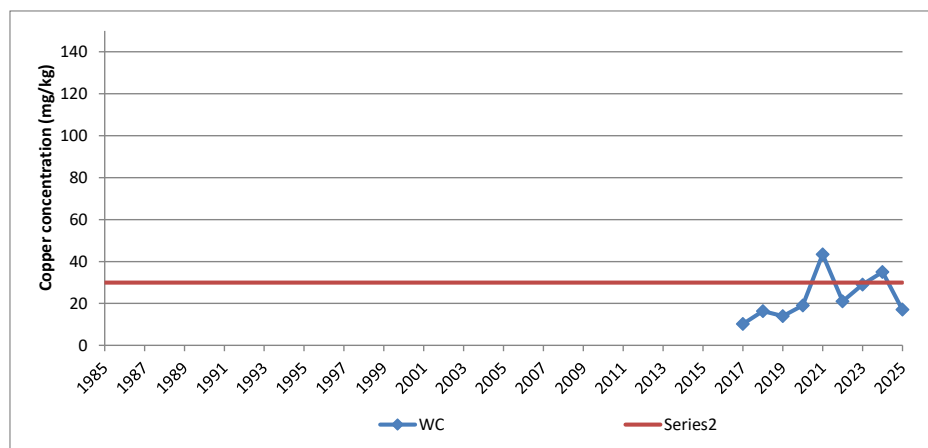
Site	Copper (mg/kg wet weight)																																										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
CH1	NA	NA	NA	NA	NA	NA	NA	88.00	90-118	146.00	130.00	160.00	260.00	90.00	99.00	45.00	104.00	83.00	48.00	124.00	158.00	261.00	168.00	146.00	181.00	73.00	300/285b	352.00	306.00	469.00	200.00	251.00	281.60	314.40	264.48	218.40	496.00	170.00	190.00	270.00	210.00		
CH2	65-73	47-76	NA	NA	NA	NA	NA	92-108	66-89	112.00	100.00	41.00	160.00	81.00	46.00	87.00	70.00	67.00	106.00	139.00	175.00	156.00	146.00	139.00	189.00	44.00	221.00	405.00	133.00	474.00	190.00	219.00	165.69	231.00	196.00	106.25	620.00	180.00	160.00	190.00	170.00		
CH3	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.00	45.00	51.00	140.00	76.00	73.00	50.00	47.00	57.00	53.00	73.00	78.00	59/55b	112.00	80.00	92.00	34.00	145.00	158.00	100.00	140.00	99.00	124.00	138.50	102.20	130.56	116.13	434.00	82.00	85.00	130.00	110.00		
CH3a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	126.00	NA	NA	NA	NA	NA	NA	NA	130.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH4	NA	NA	NA	NA	NA	NA	NA	53.00	69.00	85.00	83.00	58.00	140.00	62-70	58.00	44.00	49.00	35.00	55.00	72.00	73.00	98.00	114.00	95.00	110.00	35.00	203.00	138.00	131.00	210.00	72.00	102.00	137.76	130.53	105.35	98.26	173.60	53.00	78.00	90.00	90.00		
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	70.00	NA	NA	NA	NA	NA	NA	NA	38.00	NA	75.00	115.00	48.07	106.48	119.70	NA	204.60	NA	89.00	92.00	89.00		
CH5	NA	NA	NA	33.00	70.00	64-71	54-77	49-54	53.00	87.00	60.00	63.00	220.00	75.00	74-87	57-76	75.00	58.00	98/49d	56.00	127.00	99.00	100.00	101.00	109.00	33.00	142.00	120.00	121.00	271.00	94.00	91.00	120.06	108.00	130.68	92.40	139.50	60.00	97.00	120.00	92.00		
CH5a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	52/65b	78.00	57/55d	70.00	NA	145.00	122.00	NA	NA	27.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH6	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.00	45.00	32.00	92.00	28.00	20.00	16.00	31/29b	16.00	38.00	36.00	30/23b/31d	47.00	65.00	59.00	38.00	15.00	58.00	63.00	87.00	153.00	64.00	47.00	47.46	41.20	68.38	NA	34.10	40.00	44.00	48.00	64.00		
CH7	17-37	32-42	38-41	27-39	31.00	33-40	38-42	35-39	31-34	41.00	40.00	69.00	80.00	31-35	48-57	27.00	86.00	12/15d	40.00	54.00	45.00	28.00	48.00	63.00	70.00	10.00	56.00	63.00	122.00	54.00	63.00	43.00	35.40	32.28	73.92	35.56	34.10	39.00	32.00	33.00	34.00		
CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68.00	22/24d/24b	32.00	NA	41.00	31.00	NA	NA	53.00	NA	66.00	44.00	49.00	69.00	NA	NA	56.12	47.50	49.98	NA	102.30	34.00	31.00	40.00	34.00		
CH7b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	37.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S1	55-86	62-64	NA	NA	NA	NA	NA	99-118	90-118	147.00	69.00	150.00	160.00	73.00	135.00	48.00	75.00	91.00	67.00	121.00	168.00	NA	185.00	140.00	190.00	54.00	210.00	NA	NA	NA	230.00	212.00	294.80	291.60	218.40	291.50	651.00	160.00	220.00	210.00	220.00		
S5	51-72	55-62	NA	NA	NA	NA	NA	76-78	73-83	100.00	66.00	67.00	130.00	81.00	76.00	40.00	75.00	100.00	94.00	108.00	169.00	162.00	138.00	207.00	171.00	50.00	237.00	NA	NA	NA	220.00	168.00	190.50	226.59	215.60	184.76	403.00	140.00	170.00	190.00	170.00		
S7	47-53	55-60	NA	NA	NA	NA	NA	75-78	60-91	120.00	91.00	50.00	170.00	61.00	65.00	46.00	42.00	84.00	83.00	123.00	106/110b	104.00	150.00	168.00	151.00	36.00	249/273a	NA	NA	NA	190.00	148.00	182.50	181.04	174.58	197.50	139.50	140.00	150.00	170.00	180.00		
S8	NA	NA	NA	NA	NA	NA	NA	208.00	135-170	NA	130.00	78.00	240.00	104.00	165.00	65.00	91.00	104.00	118/120b	132.00	145.00	120.00	151.00	115.00	131.00	68.00	208.00	NA	NA	NA	210.00	165.00	160.13	198.47	149.60	192.78	238.70	130.00	170.00	240.00	170.00		
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130.00	240.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	151.00	101.00	151.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S8b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	131.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	NA	NA	NA	NA	NA	NA	NA	22.00	25-40	NA	NA	NA	NA	29.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
R21	NA	NA	NA	NA	NA	NA	NA	24.00	25.00	NA	NA	NA	NA	20.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH7 REF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150.00	120/120d	NA	120.00	110.00	99.00	87.00	120.00	95.00	120.00	110.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.78	11.33	21.63	20.34	30.69	30.00	23.00	20.00	17.00		
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.20	16.32	13.97	19.03	43.40	21.00	29.00	35.00	17.00		
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.09	11.84	17.14	16.65	23.56	12.00	16.00	18.00	14.00		
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.21	14.54	18.23	18.75	29.14	19.00	17.00	17.00	13.00		

Guideline Exceedences	Not Sampled	Half the LOR
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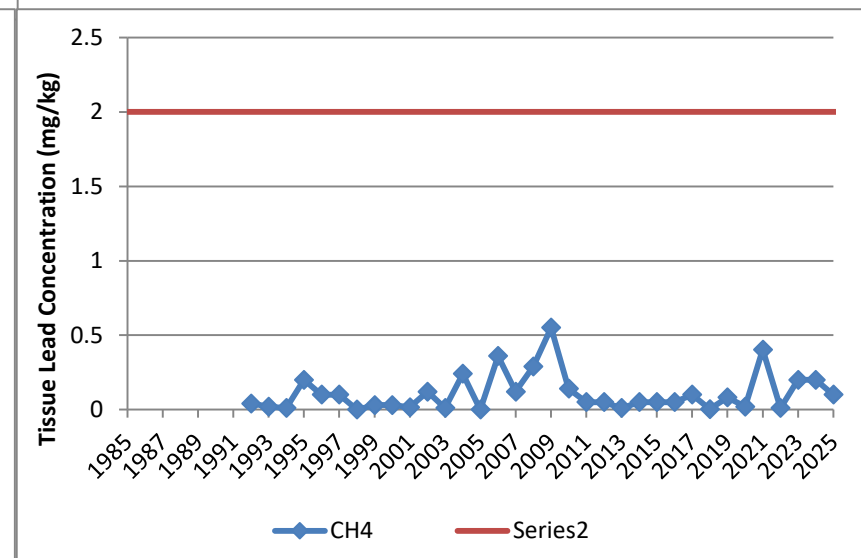
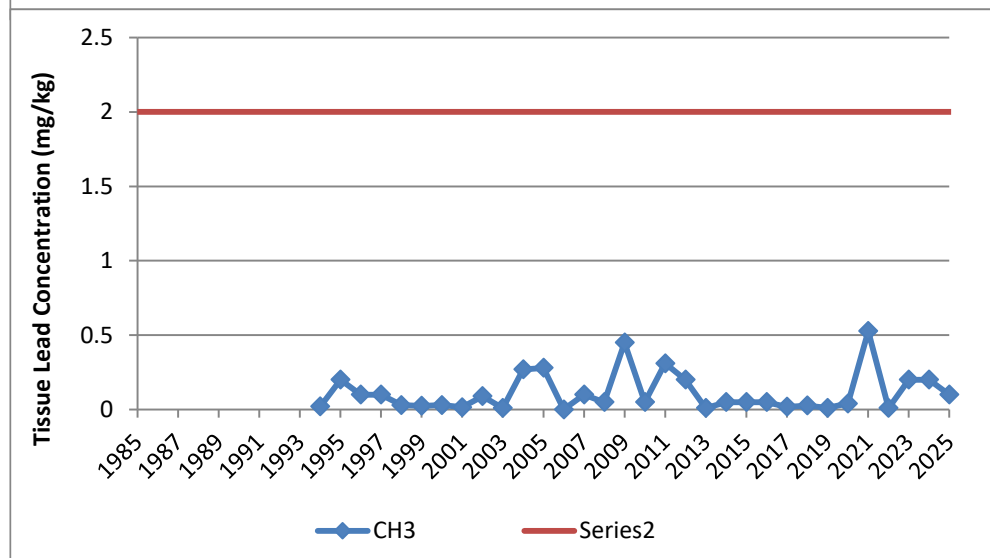
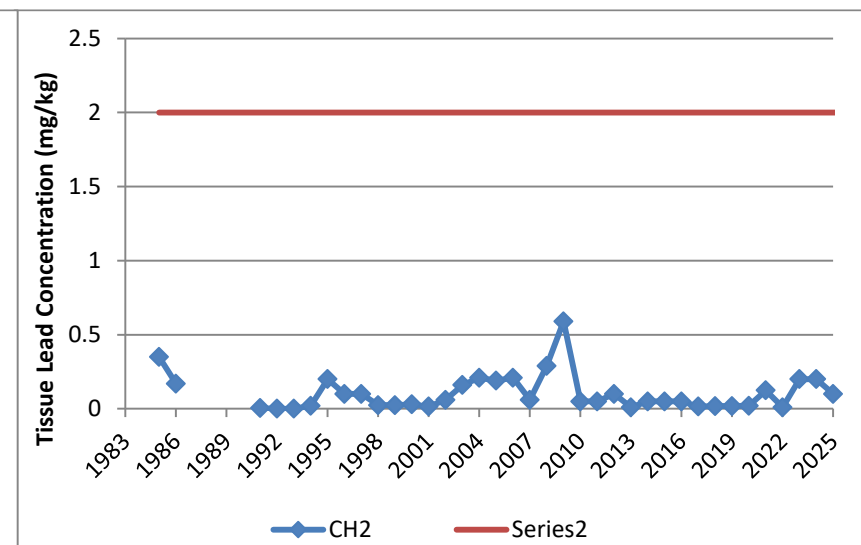
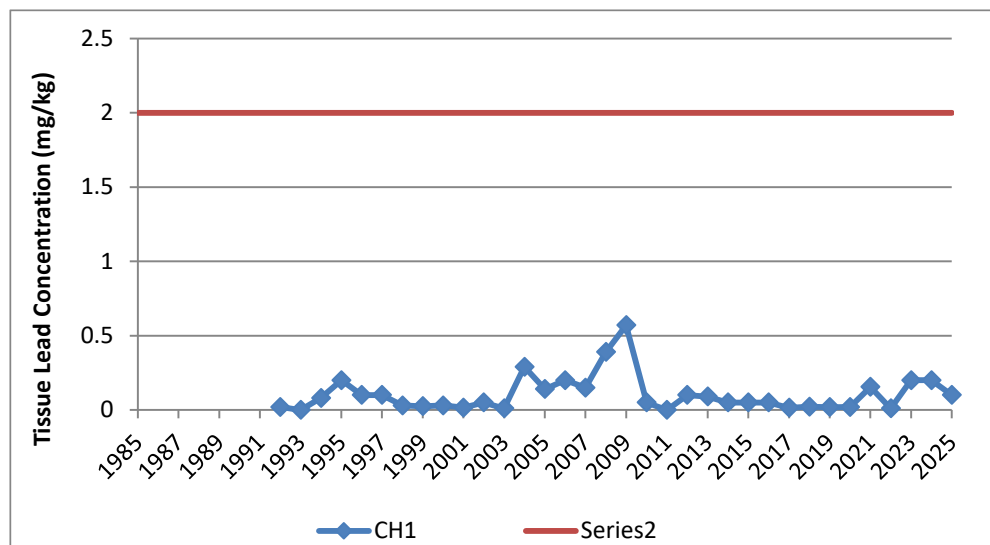
Lead

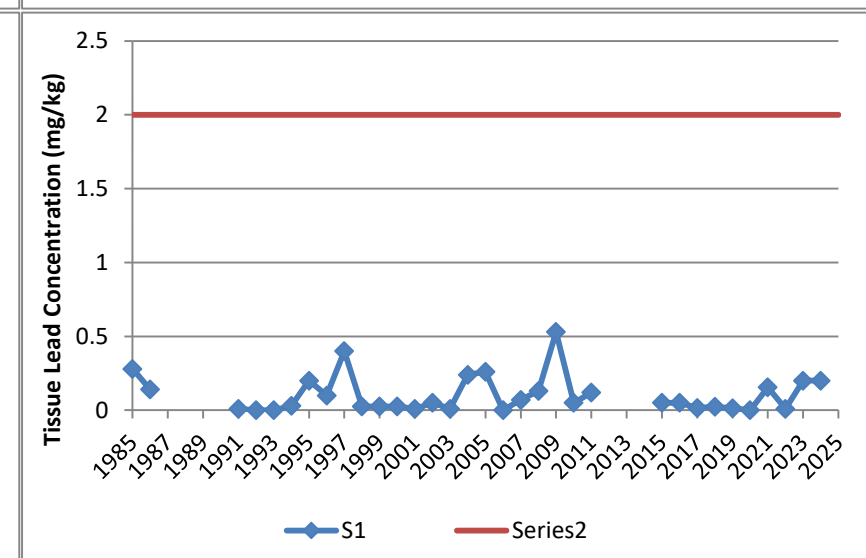
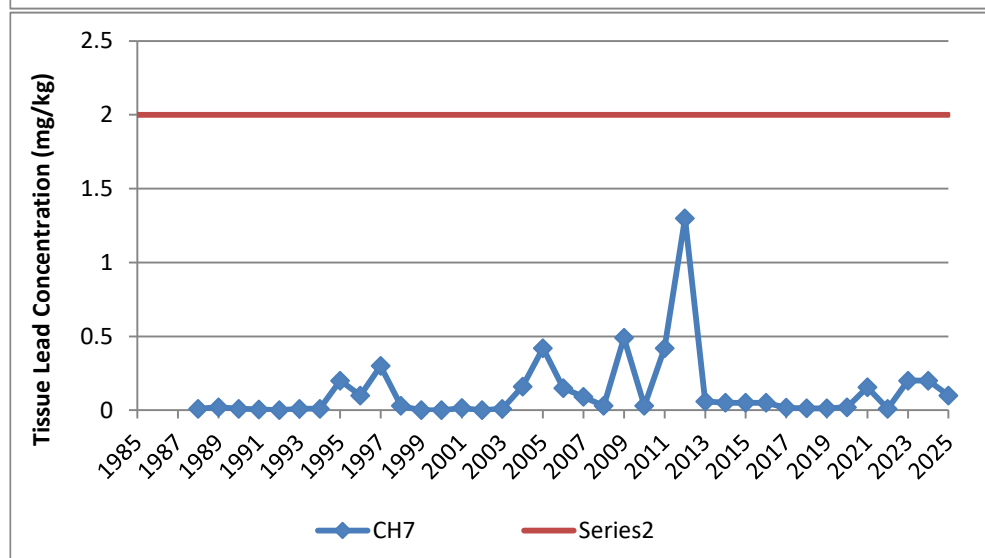
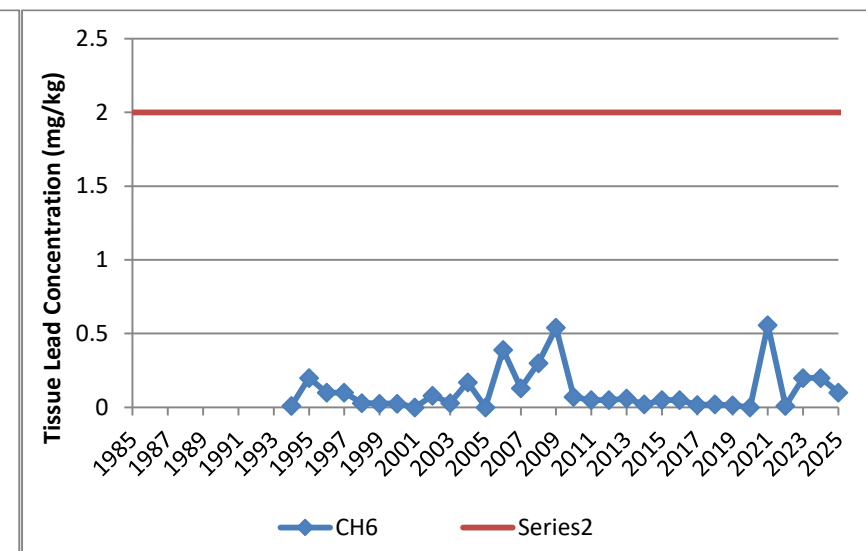
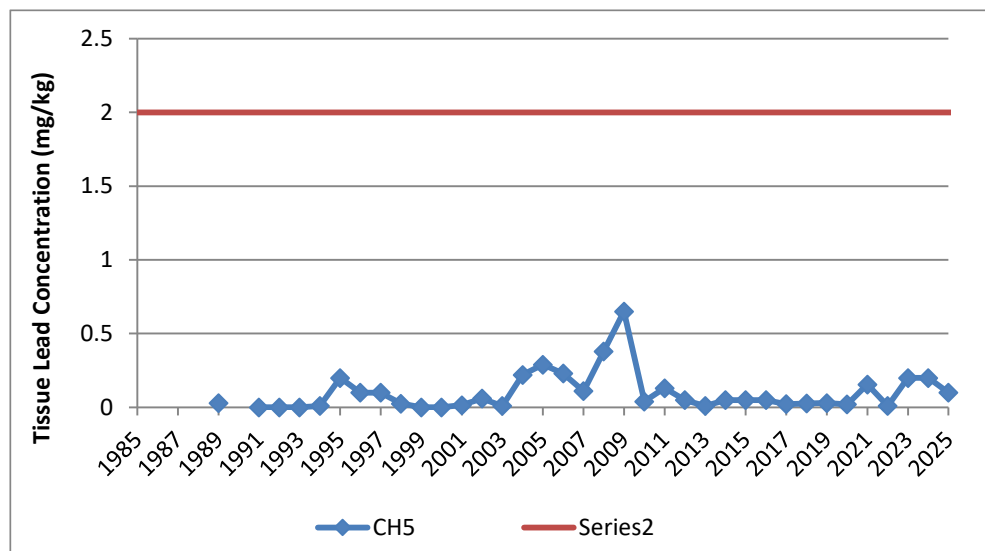
Site	Lead (mg/kg wet weight)																																										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
CH1	NA	NA	NA	NA	NA	NA	NA	0.02	0.01-0.02	0.08	0.2	0.1	0.1	0.03	0.025	0.03	0.015	0.05	0.01	0.29	0.14	0.2	0.15	0.39	0.57	0.05	0.33/0.42b	0.1	0.09	0.05	0.05	0.05	0.01	0.02	0.02	0.02	0.16	0.01	<0.2	<0.2	<0.2		
CH2	0.35	0.17	NA	NA	NA	NA	0.005	0.005-0.02	0.02-0.03	0.02	0.2	0.1	0.1	0.025	0.025	0.03	0.015	0.06	0.16	0.21	0.19	0.21	0.06	0.29	0.59	0.05	0.05	0.1	0.01	0.05	0.05	0.05	0.01	0.02	0.02	0.02	0.12	0.01	<0.2	<0.2	<0.2		
CH3	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02	0.2	0.1	0.1	0.03	0.025	0.03	0.015	0.09	0.01	0.27	0.28	0.31/0.23b	0.1	0.05	0.45	0.05	0.31	0.2	0.01	0.05	0.05	0.05	0.02	0.03	0.01	0.04	0.53	0.01	<0.2	<0.2	<0.2		
CH3a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH4	NA	NA	NA	NA	NA	NA	NA	0.04	0.02	0.01	0.2	0.1	0.1	0.025-<0.6	0.03	0.03	0.015	0.12	0.01	0.24	0.17/0.13d	0.36	0.12	0.29	0.55	0.14	0.05	0.05	0.01	0.05	0.05	0.05	0.10	0.00	0.08	0.02	0.40	0.01	<0.2	<0.2	<0.2		
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.39/0.13d	NA	NA	NA	NA	NA	NA	NA	0.01	NA	0.05	0.05	0.01	0.04	0.01	NA	0.12	0.01	<0.2	<0.2	<0.2			
CH5	NA	NA	NA	NA	0.03		0.01-0.02	0.005-0.02	0.01-0.02	0.01	0.2	0.1	0.1	0.025	0.025-<0.6	0.025-<0.07	0.015	0.06	0.01	0.22	0.29	0.23	0.11	0.38	0.65	0.04	0.13	0.05	0.01	0.05	0.05	0.05	0.02	0.03	0.03	0.02	0.16	0.01	<0.2	<0.2	<0.2		
CH5a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03/0.015b	0.06	0.015	0.45	NA	0.23	0.1	NA	NA	0.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH6	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.01	0.2	0.1	0.1	0.03	0.025	0.025	0.015/0.015b	0.08	0.03	0.17	0.40/0.19b/0.056	0.39	0.13	0.3	0.54	0.07	0.05	0.05	0.06	0.02	0.05	0.05	0.02	0.02	0.01	NA	0.56	0.01	<0.2	<0.2	<0.2		
CH6a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02	NA	NA	NA	NA	NA	NA	NA	
CH7	NA	NA	NA	0.01	0.02	0.01	0.005	0.01-0.03	0.01	0.01	0.2	0.1	0.3	0.03	0.025-<0.6	0.025-<0.6	0.015	0.06/0.06b	0.01	0.16	0.42	0.15	0.09	0.03	0.49	0.03	0.42	1.3	0.06	0.05	0.05	0.05	0.02	0.01	0.01	0.02	0.16	0.01	<0.2	<0.2	<0.2		
CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	NA	0.03	0.015	0.06	0.015	NA	0.43	0.21	NA	NA	0.53	NA	0.15	0.05	0.01	0.03	NA	NA	0.01	0.01	NA	NA	0.16	0.01	<0.2	<0.2	<0.2		
CH7b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S1	0.28	0.14	NA	NA	NA	NA	0.01	0.005-0.02	0.01-0.02	0.03	0.2	0.1	0.4	0.025	0.025	0.025	0.01	0.05	0.01	0.24	0.26	NA	0.07	0.13	0.53	0.05	0.12	NA	NA	NA	0.05	0.05	0.02	0.02	0.01	NA	0.16	0.01	<0.2	<0.2	<0.2		
S5	0.22	0.13	NA	NA	NA	NA	0.02	0.005-0.03	0.01-0.02	0.02	0.2	0.1	0.3	0.03	0.025	0.025	0.015	0.05	0.01	0.34	0.42	0.25	0.11	0.03	0.53	0.11	0.42	NA	NA	NA	0.05	0.05	0.01	0.02	0.02	0.17	0.12	0.01	<0.2	<0.2	<0.2		
S7	0.26	0.14	NA	NA	NA	NA	0.01	0.005-0.03	0.02-0.06	0.02	0.2	0.1	0.1	0.03	0.025	0.03	0.015	0.05	0.01	0.46	0.05/0.10b	0.16	0.09	0.06	0.44	0.03	0.16/0.3a	NA	NA	NA	0.05	0.05	0.01	0.02	0.02	0.08	0.12	0.01	<0.2	<0.2	<0.2		
S8	NA	NA	NA	NA	NA	NA	NA	0.02	0.02-0.03	NA	0.2	0.1	0.2	0.03	0.03	0.025	0.015	0.08	0.01	0.48	0.4	0.29	0.1	0.33	0.46	0.05	0.05	NA	NA	NA	0.05	0.05	0.01	0.01	0.01	0.24	0.22	0.01	<0.2	<0.2	<0.2		
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	0.29	0.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	NA	NA	NA	NA	NA	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	NA	NA	NA	NA	NA	NA	NA	NA	0.005-0.06	NA	NA	NA	NA	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R21	NA	NA	NA	NA	NA	NA	NA	NA	0.03	NA	NA	NA	NA	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7 REF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5	1.8	NA	3.1	0.4	1.8	0.3	2.2	0.2	0.01	0.2	NA	NA	NA	NA	NA	NA	NA	0.01	NA	NA	NA	NA	
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	0.03	0.05	NA	0.22	0.01	<0.2	<0.2	<0.2		
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	0.02	0.03	0.01	0.19	0.01	<0.2	<0.2	<0.2		
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	0.04	0.04	0.2	0.22	0.01	<0.2	<0.2	<0.2		
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02	0.03	0.03	NA	0.12	0.01	<0.2	<0.2	<0.2		

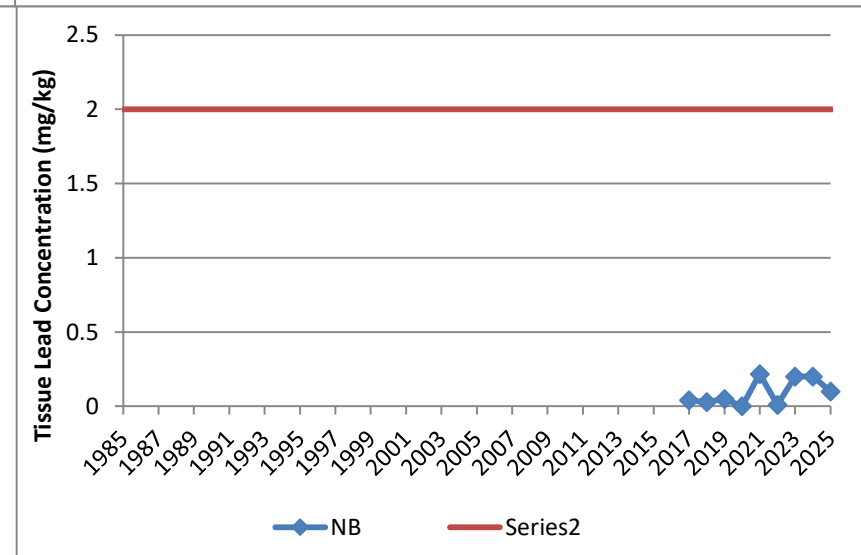
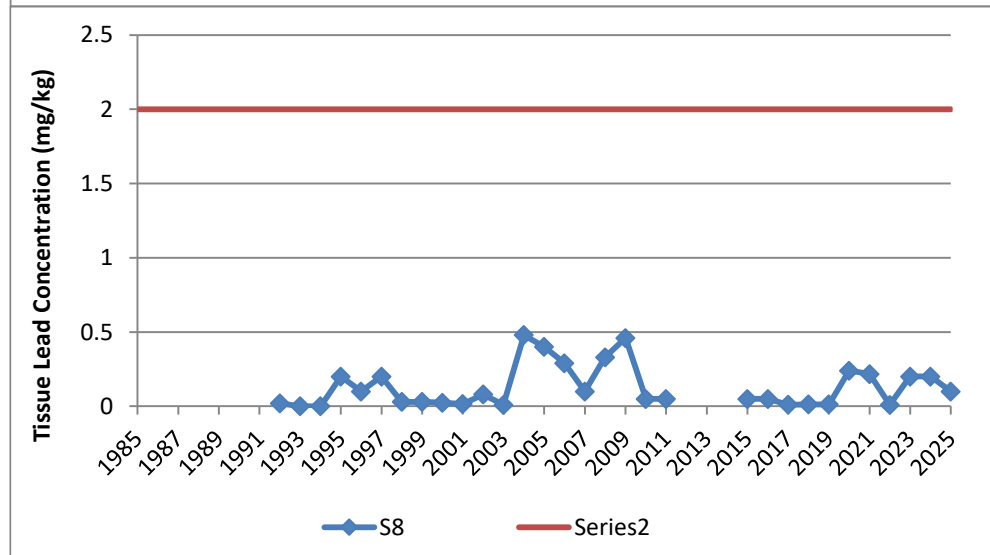
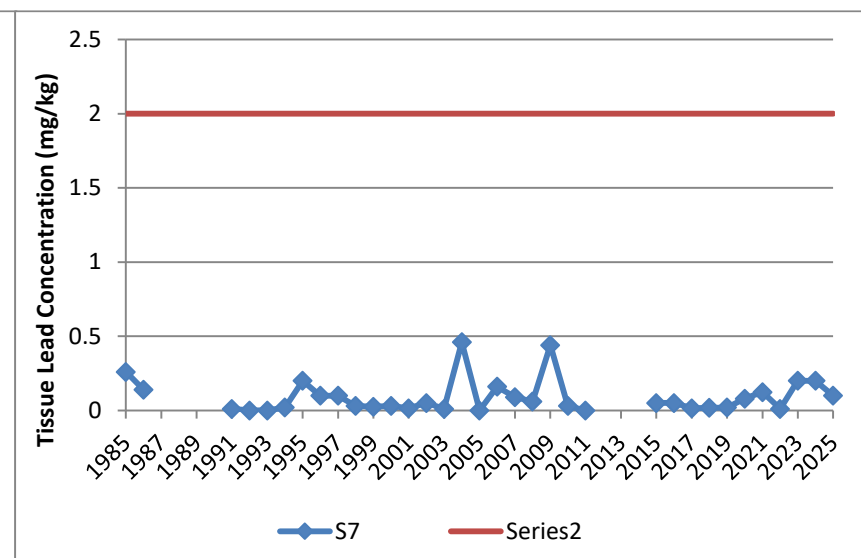
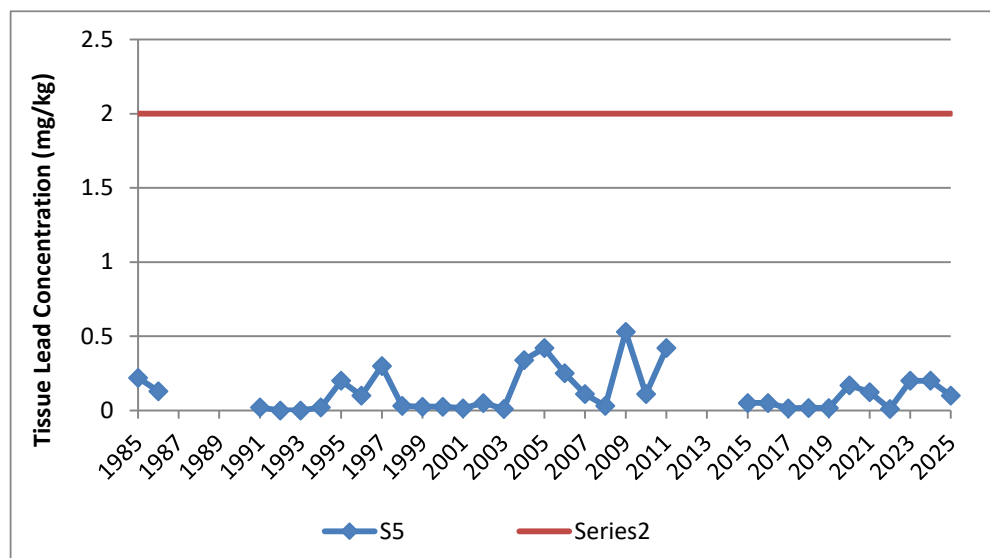
Guideline Exceedences

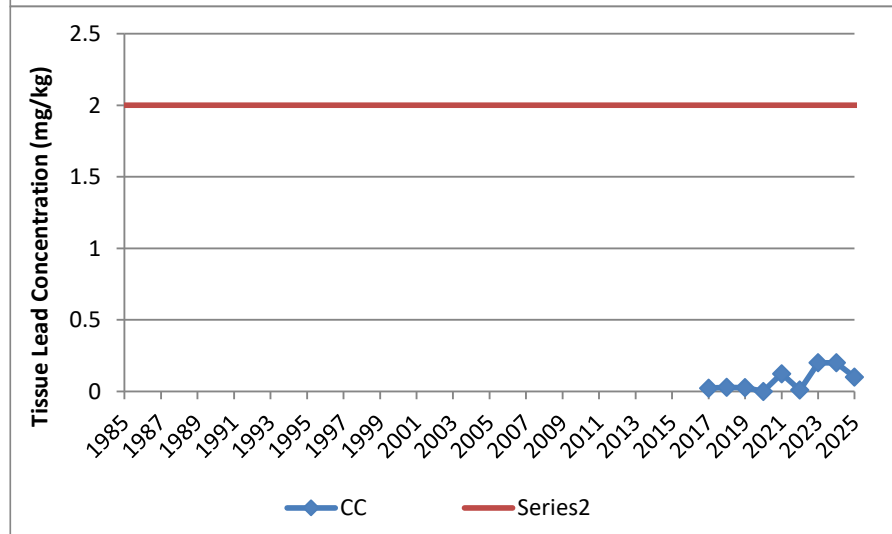
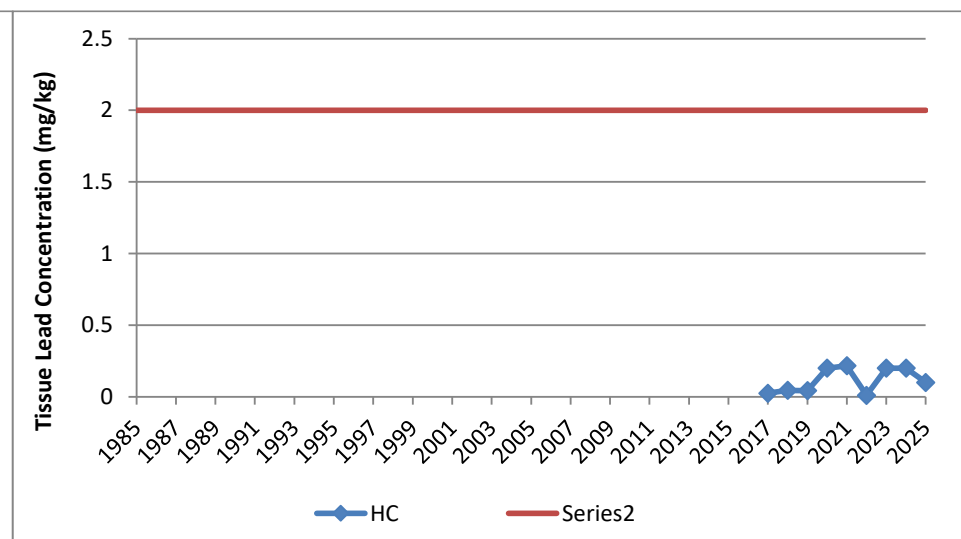
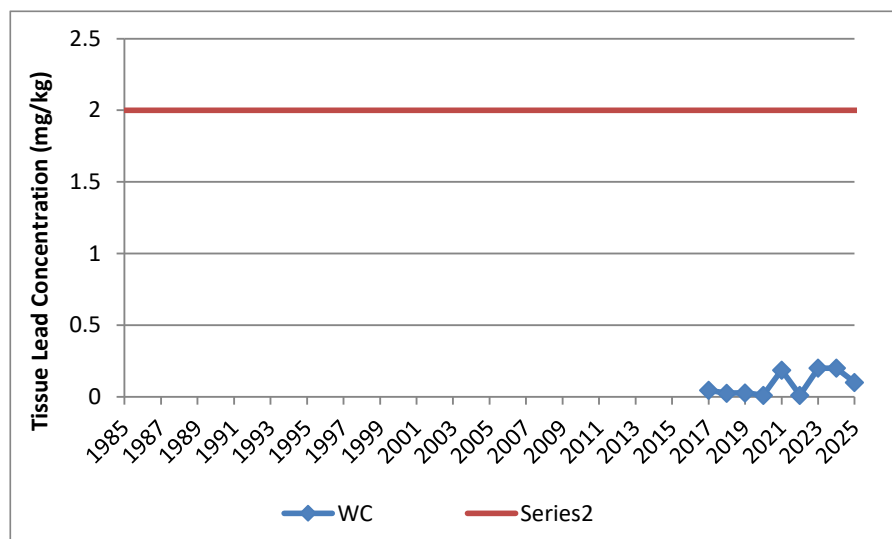
Not Sampled

Half the LOR



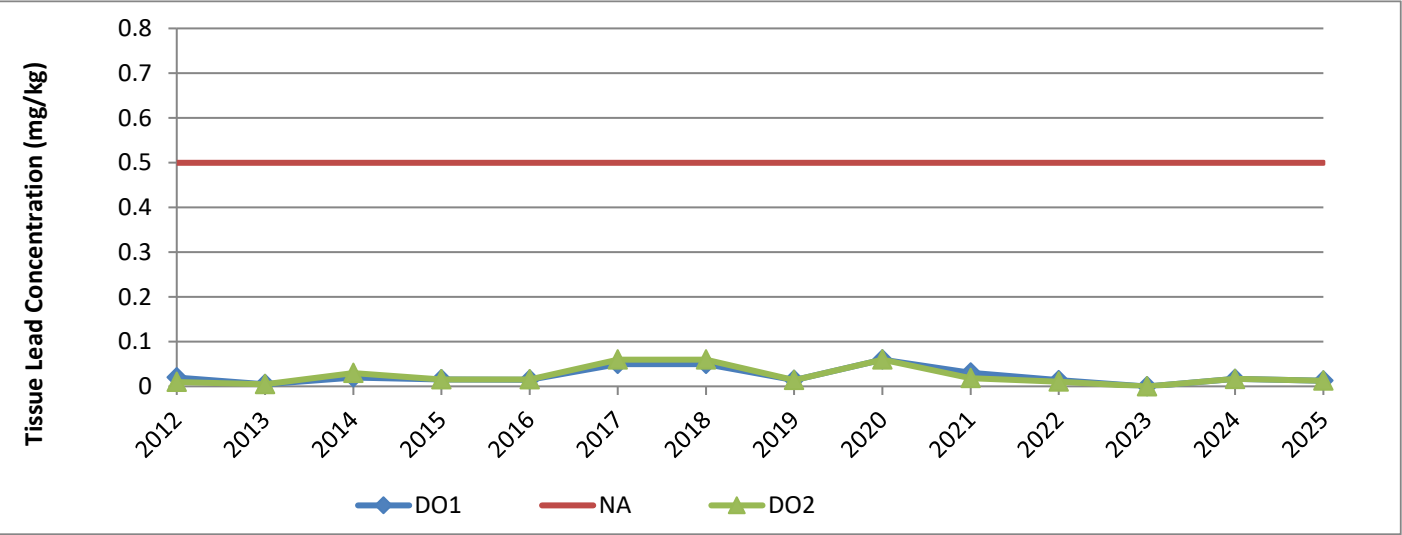






Mercury

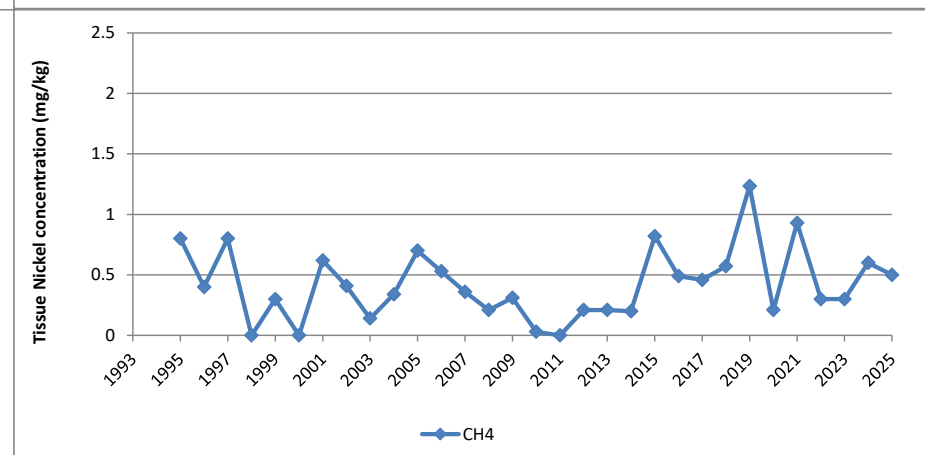
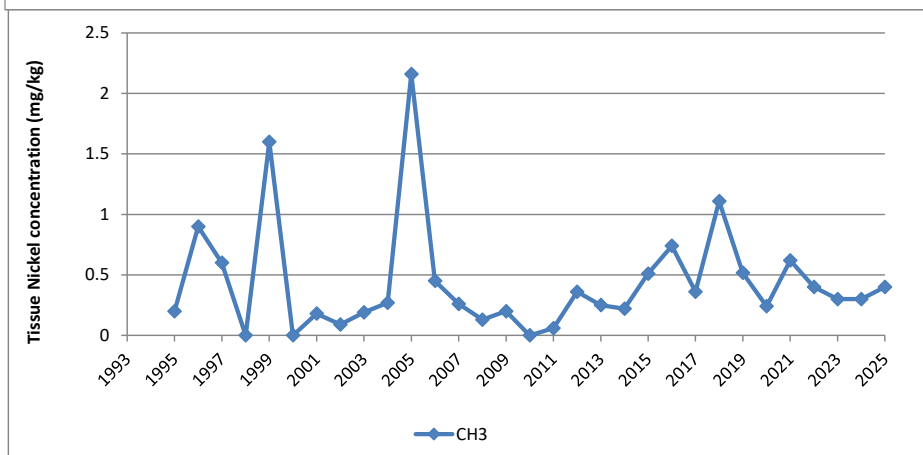
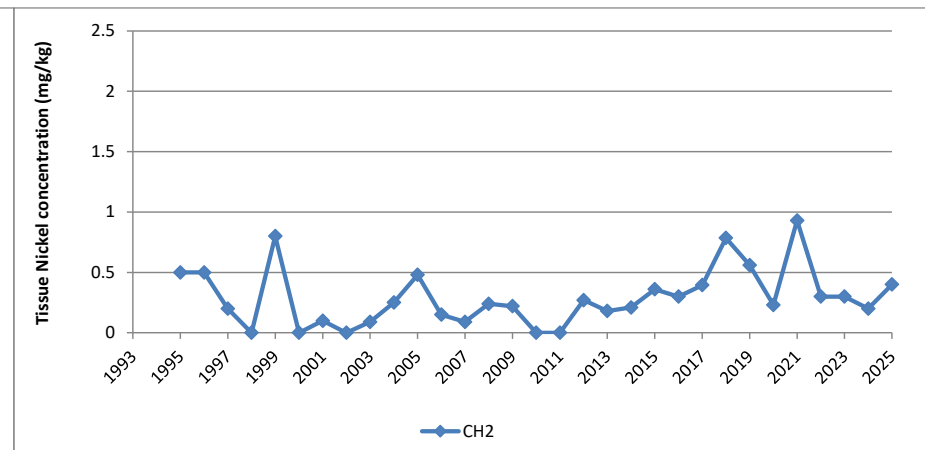
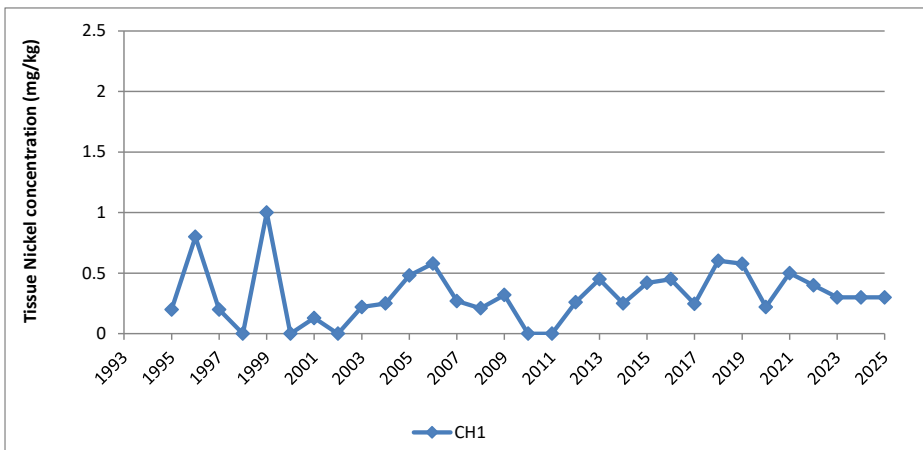
Mercury (mg/kg)														
Site	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
DO1	0.02	<0.01	0.02	0.016	0.015	0.05	0.05	0.01	0.06	0.03	0.014	0.014	0.017	0.013
DO2	0.01	<0.01	0.03	0.016	0.016	0.06	0.06	0.01	0.06	0.02	0.011	0.011	0.017	0.013
CH1 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.014	0.012	0.013	NA
CH2 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.013	0.015	0.016	NA
CH3 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.011	0.009	0.015	NA
CH4 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.008	0.010	0.017	NA
CH4a OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.01	0.009	0.021	NA
CH5 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.012	0.019	0.018	NA
CH6 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016	0.014	0.02	NA
CH7 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016	0.013	0.013	NA
CH7a OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.018	0.011	0.016	NA
S1 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.012	0.011	0.013	NA
S5 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016	0.012	0.014	NA
S7 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.014	0.014	0.015	NA
S8 OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.014	0.013	0.017	NA
WC OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.023	0.024	0.029	NA
CC OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.007	0.008	0.009	NA
HC OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.007	0.007	0.014	NA
NB OYS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.013	0.009	0.012	NA
FSANZ Maximum Level														0.5

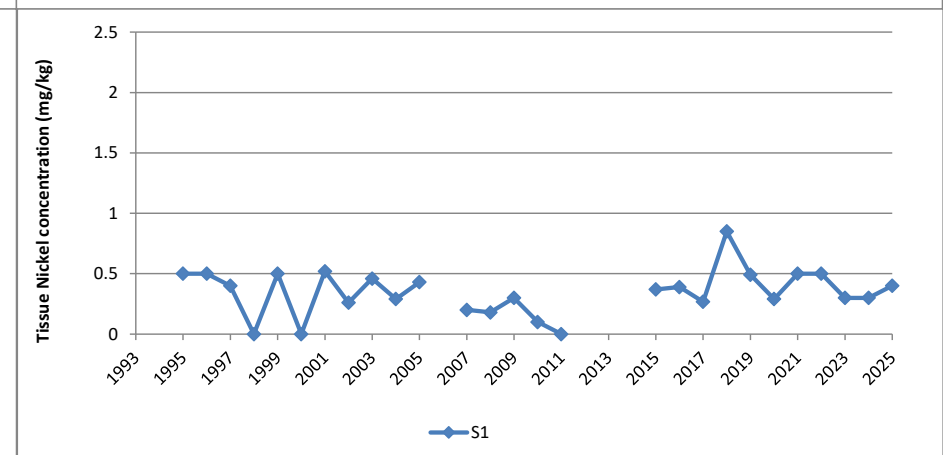
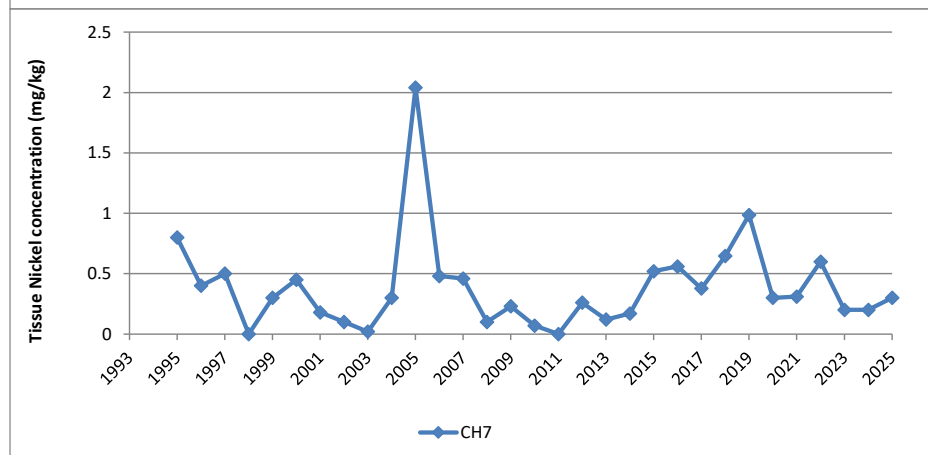
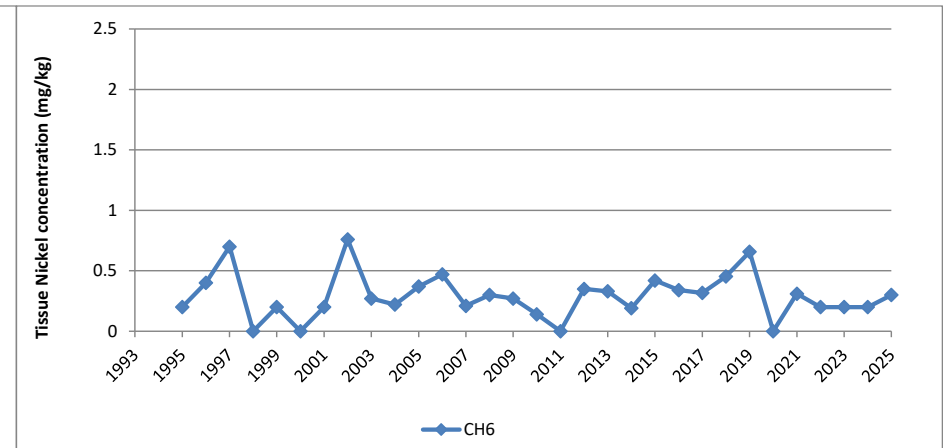
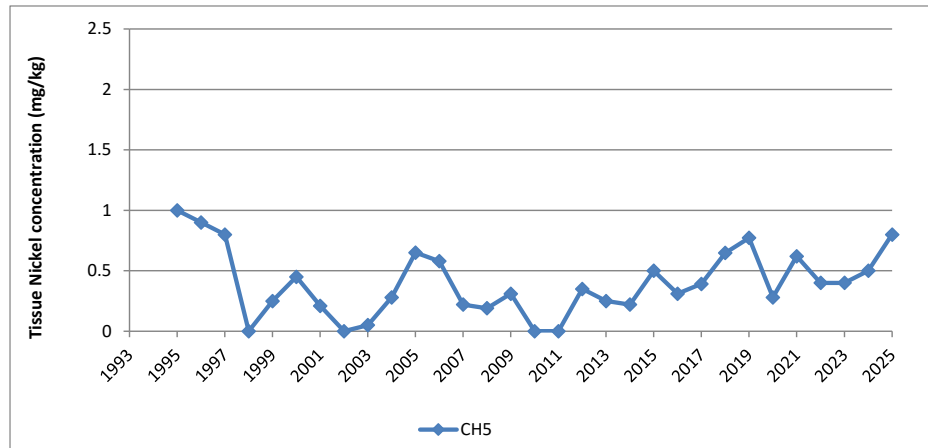


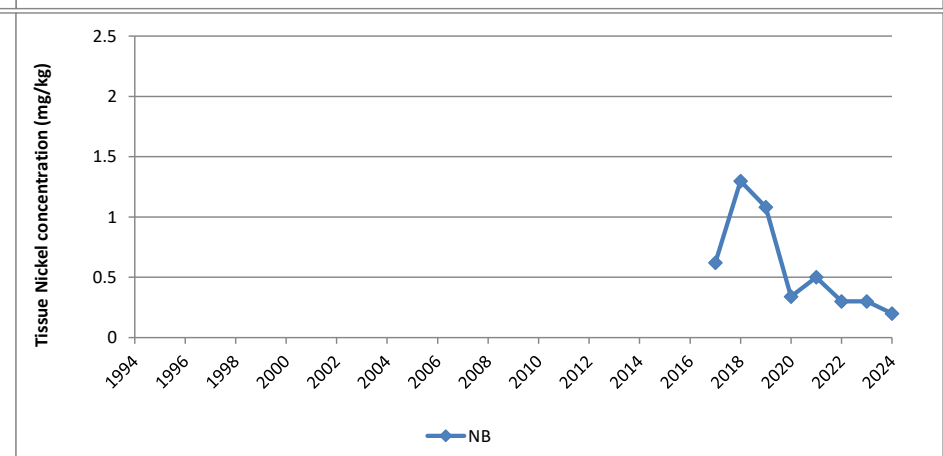
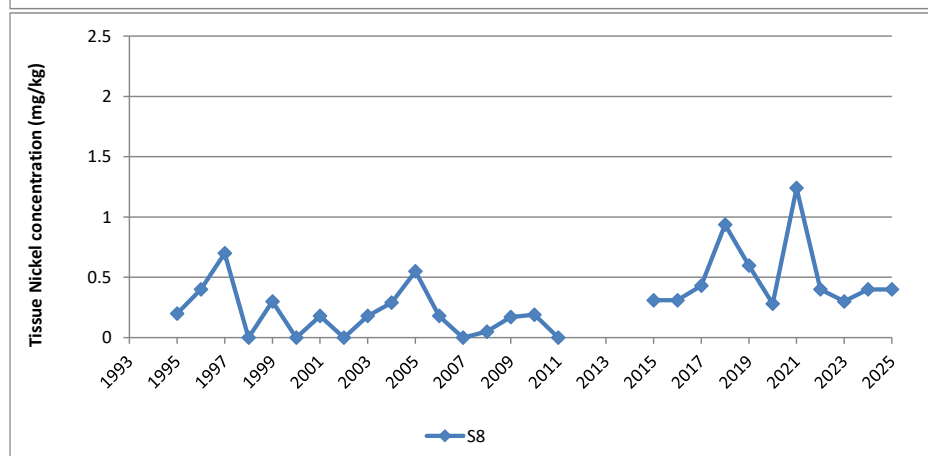
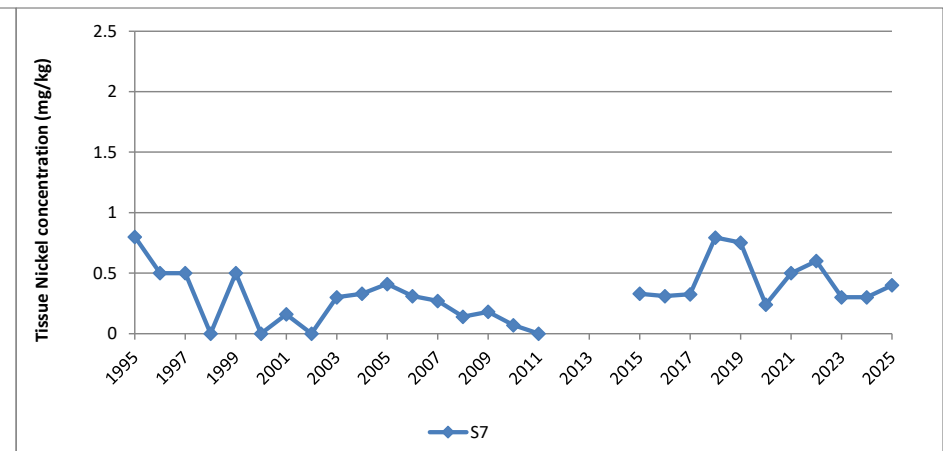
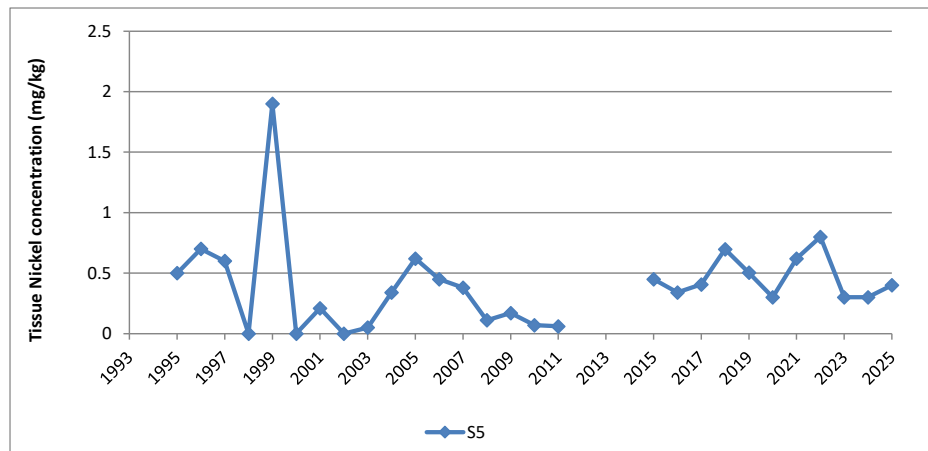
Nickel

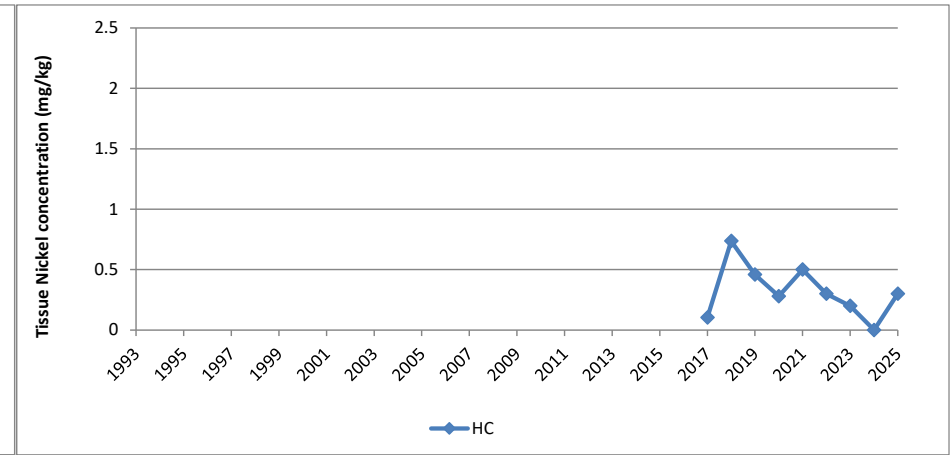
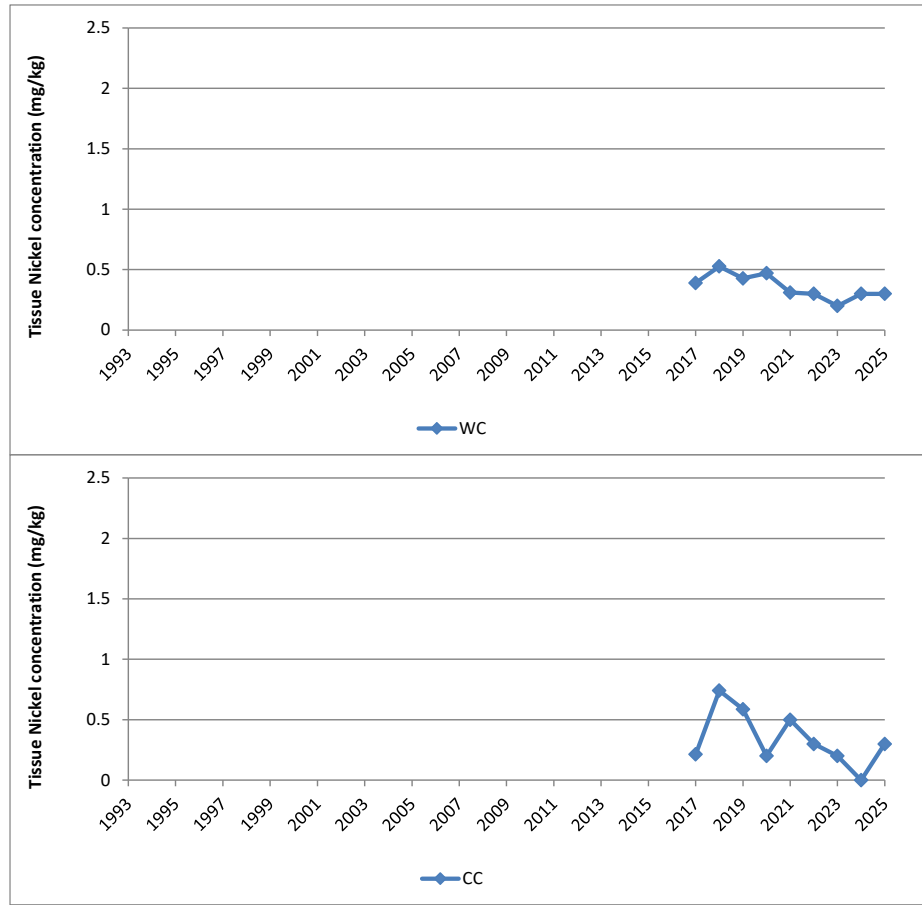
Site	Nickel (mg/kg wet weight)																															
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
CH1	0.2	0.8	0.2	<0.5	1	<0.3	0.13	<0.1	0.22	0.25	0.48	0.58	0.27	0.21	0.32	<0.1	<0.1/<0.1b	0.26	0.45	0.25	0.42	0.45	0.25	0.60	0.58	0.22	0.5	0.4	0.3	0.3	0.3	
CH2	0.5	0.5	0.2	<0.5	0.8	<0.3	0.1	<0.1	0.09	0.25	0.48	0.15	0.09	0.24	0.22	<0.1	<0.1	0.27	0.18	0.21	0.36	0.3	0.39	0.79	0.56	0.23	0.93	0.3	0.3	0.2	0.4	
CH3	0.2	0.9	0.6	<0.5	1.6	<0.3	0.18	0.09	0.19	0.27	2.16	0.45/0.26b	0.26	0.13	0.2	<0.1	0.06	0.36	0.25	0.22	0.51	0.74	0.36	1.11	0.52	0.24	0.62	0.4	0.3	0.3	0.4	
CH3a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH4	0.8	0.4	0.8	<0.5	0.3	<0.3	0.62	0.41	0.14	0.34	0.7	0.53	0.36	0.21	0.31	0.03	<0.1	0.21	0.21	0.2	0.82	0.49	0.46	0.57	1.23	0.21	0.93	0.3	0.3	0.6	0.5	
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57	NA	NA	NA	NA	NA	NA	NA	0.14	NA	0.8	0.38	0.40	0.70	0.61	NA	0.62	0.3	0.3	0.5	0.9	
CH5	1	0.9	0.8	<0.5	0.20-0.3	<0.4-5.0	0.21	<0.1	0.05/0.20d	0.28	0.65	0.58	0.22	0.19	0.31	<0.1	<0.1	0.35	0.25	0.22	0.5	0.31	0.39	0.65	0.77	0.28	0.62	0.4	0.4	0.5	0.8	
CH5a	NA	NA	NA	NA	NA	NA	0.1/0.2b	<0.1	0.03/0.13d	0.38	NA	0.46	0.26	NA	NA	0.11	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH6	0.2	0.4	0.7	<0.5	0.2	<0.3	0.2/0.2b	0.76	0.27	0.22	0.37/0.31b	0.47	0.21	0.3	0.27	0.14	<0.1	0.35	0.33	0.19	0.42	0.34	0.32	0.45	0.66	NA	0.31	0.2	0.2	0.2	0.3	
CH6a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA	
CH7	0.6	0.3	0.5	0.2-0.6	<0.2	0.1-0.2	0.08	0.09	0.13	0.41	0.25	<0.13	0.39	0.1	0.21	0.07	0.11	0.18	0.17	0.17	0.84	0.56	0.38	0.65	0.99	0.3	0.31	0.6	0.2	0.2	0.3	
CH7a	0.8	0.4	0.5	<0.5	0.3	<0.3-0.6	0.18	0.1/0.1b	0.02/0.08d	0.3	2.04/3.24d	0.48	0.46	0.1	0.23	0.07	<0.1	0.26	0.12	0.17	0.52	NA	0.34	0.70	NA	NA	0.5	0.4	<0.2	0.3	0.3	
CH7b	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S1	0.5	0.5	0.4	<0.5	0.5	<0.3	0.52	0.26	0.46	0.29	0.43	NA	0.2	0.18	0.3	0.1	<0.1	NA	NA	NA	0.37	0.39	0.27	0.85	0.49	0.29	0.5	0.5	0.3	0.3	0.4	
S5	0.5	0.7	0.6	<0.5	1.9	<0.3	0.21	<0.1	0.05	0.34	0.62	0.45	0.38	0.11	0.17	0.07	0.06	NA	NA	NA	0.45	0.34	0.41	0.70	0.50	0.3	0.62	0.8	0.3	0.3	0.4	
S7	0.8	0.5	0.5	<0.5	0.5	<0.3	0.16	<0.1	0.3	0.33	0.41/0.43b	0.31	0.27	0.14	0.18	0.07	<0.1/<0.1a	NA	NA	NA	0.33	0.31	0.33	0.79	0.75	0.24	0.5	0.6	0.3	0.3	0.4	
S8	0.2	0.4	0.7	<0.5	0.3	<0.3	0.18	<0.1	0.18	0.29	0.55	0.18	0.36/0.44d	0.05	0.17	0.19	<0.1	NA	NA	NA	0.31	0.31	0.43	0.94	0.60	0.28	1.24	0.4	0.3	0.4	0.4	
S8a	NA	NA	NA	NA	NA	NA	NA	<0.1	NA	NA	NA	NA	0.20/0.36d	0.17	0.22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S8b	NA	NA	NA	NA	NA	NA	NA	NA	0.25	NA	NA	NA	NA	NA	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7 REF	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.7	1.8	NA	1.3	1.5	1.4	1.7	0.4	1.7	1.1	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.62	1.30	1.08	0.34	0.5	0.3	0.3	0.2	0.5		
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.39	0.53	0.43	0.47	0.31	0.3	0.2	0.3	0.3	
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10	0.74	0.46	0.28	0.5	0.3	0.2	<0.2	0.3	
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.21	0.74	0.59	0.2	0.5	0.3	<0.2	<0.2	0.3	

Key
Not sampled
Half LoR









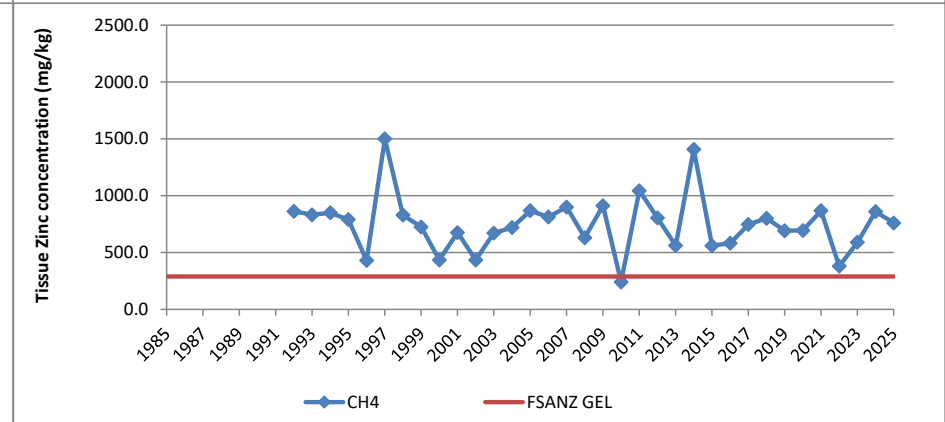
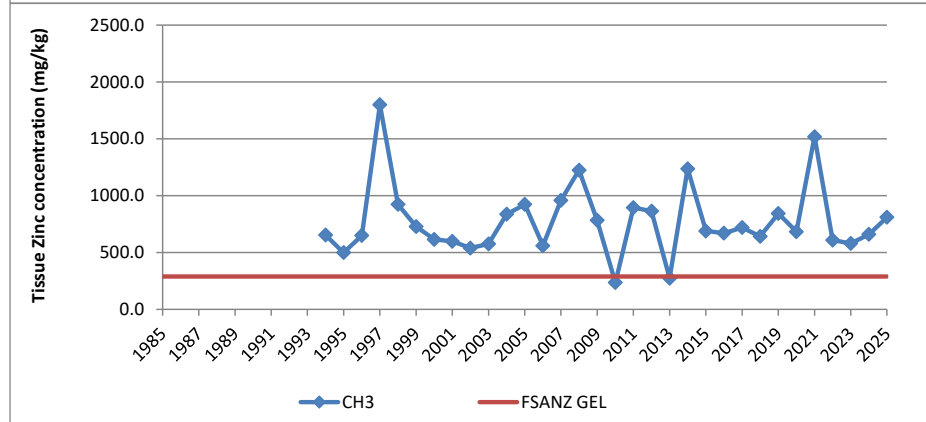
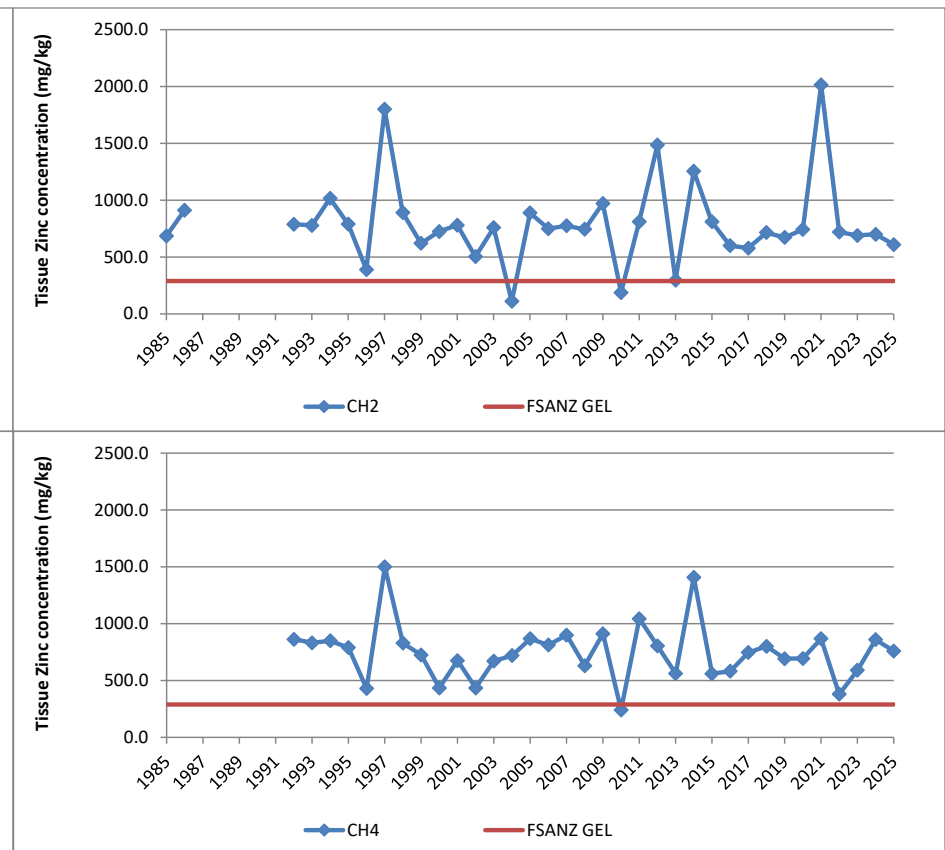
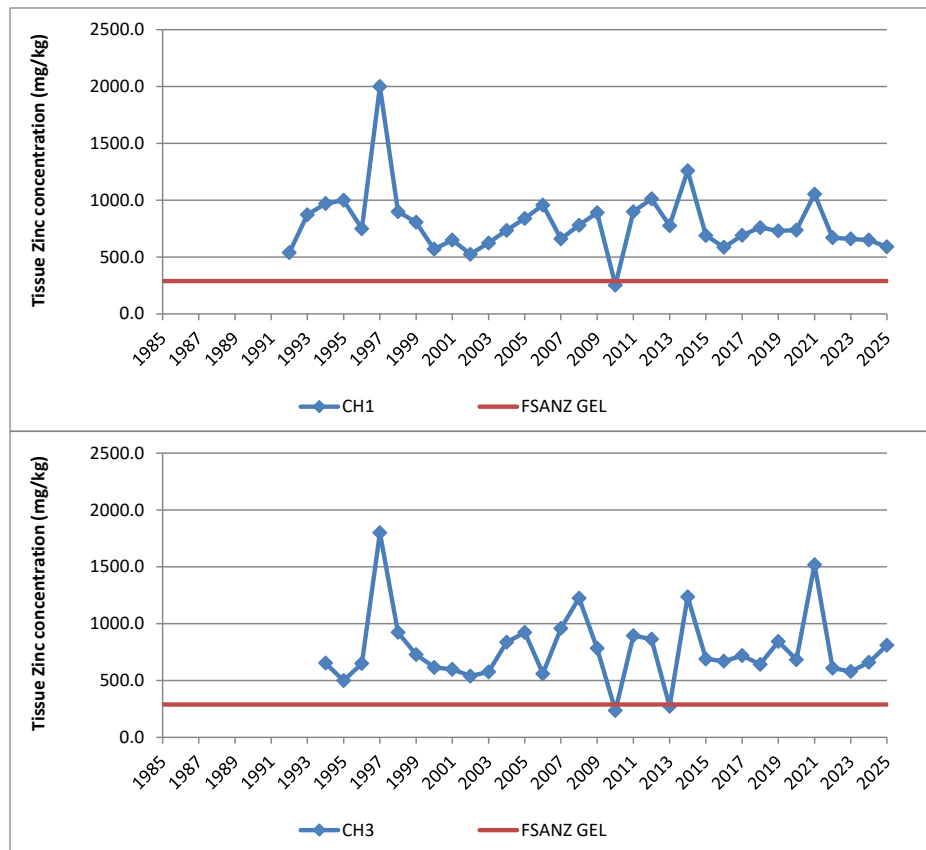
Zinc

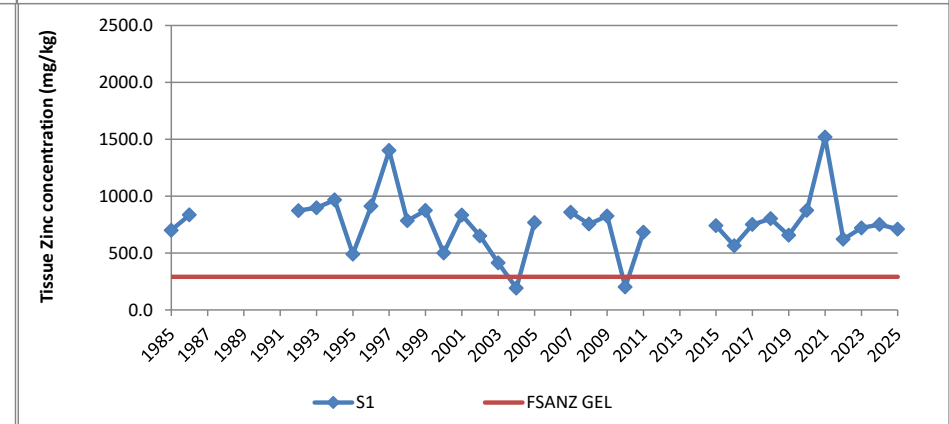
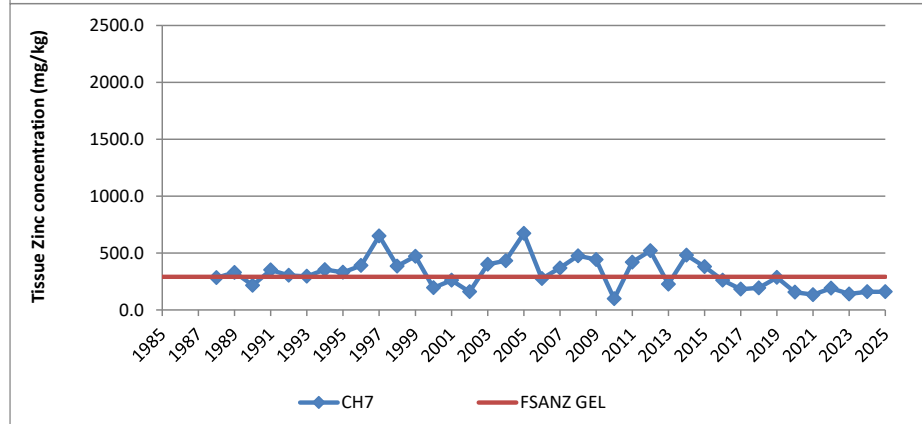
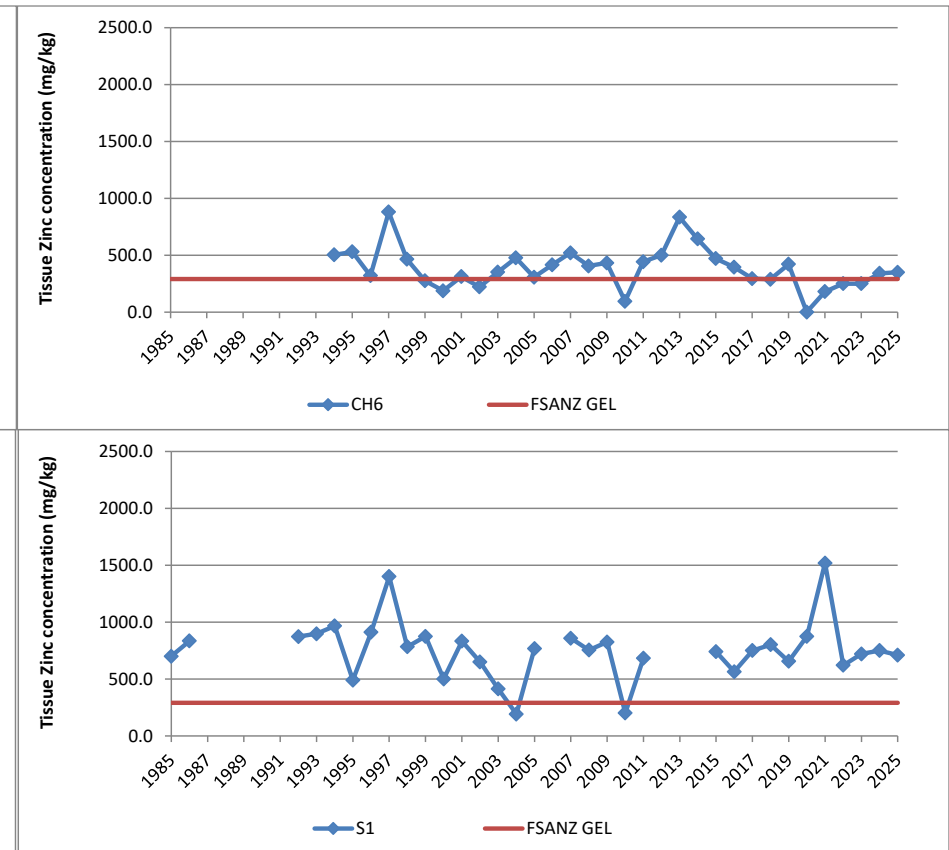
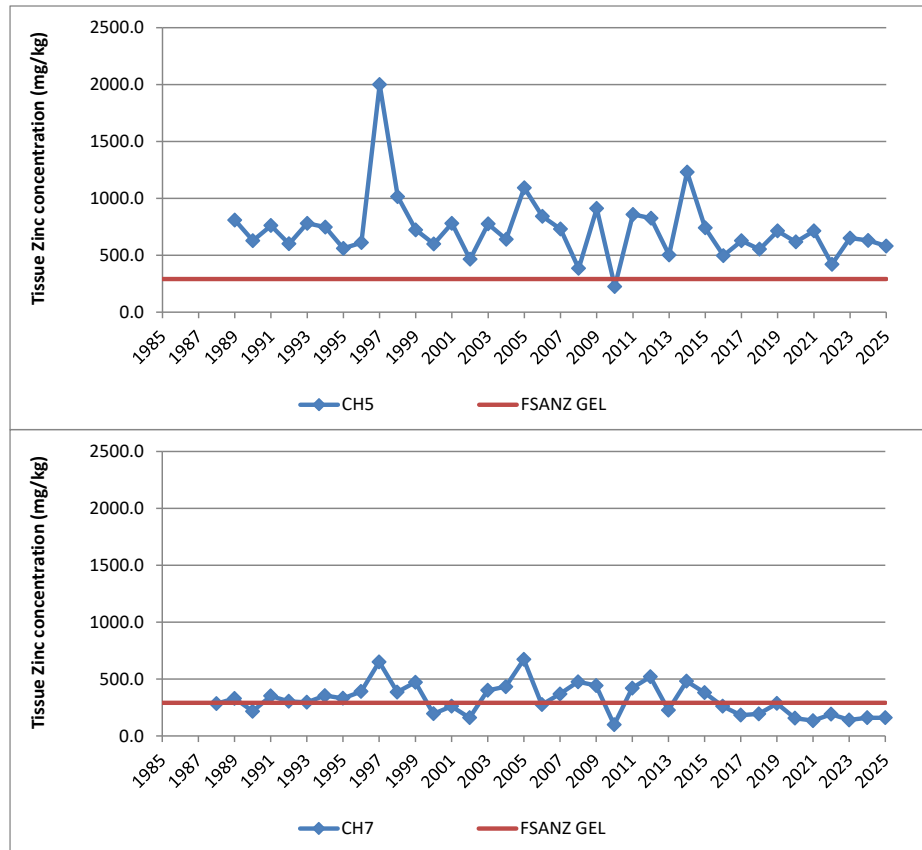
Site	mg/kg wet weight																																										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
CH1	NA	NA	NA	NA	NA	NA	NA	540.0	813-933	971.0	1000.0	750.0	2000.0	900.0	806.0	570.0	650.0	525.0	624.0	735.0	840.0	957.0	660.0	780.0	891.0	254.0	900/870b	1012.0	776.0	1260.0	690.0	586.0	691.2	759.8	729.6	737.1	1054.0	670.0	660	650.0	590		
CH2	685.0	912.0	NA	NA	NA	NA	NA	780-797	603-953	1016.0	790.0	390.0	1800.0	891.0	621.0	725.0	780.0	504.0	759.0	111.0	888.0	750.0	775.0	744.0	972.0	188.0	810.0	1485.0	297.0	1256.0	810.0	600.0	578.6	716.1	672.0	742.5	2015.0	720.0	690	700.0	610		
CH3	NA	NA	NA	NA	NA	NA	NA	NA	NA	654.0	500.0	650.0	1800.0	924.0	729.0	616.0	598.0	540.0	576.0	837.0	924.0	560/520b	960.0	1225.0	784.0	236.0	896.0	864.0	274.0	1237.0	690.0	670.0	720.2	642.4	843.2	683.6	1519.0	610.0	580	660.0	810		
CH3a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	896.0	NA	NA	NA	NA	NA	NA	664.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH4	NA	NA	NA	NA	NA	NA	NA	863.0	832.0	849.0	790.0	430.0	1500.0	868-972	725.0	435.0	676.0	435.0	672.0	720.0	868.0	812.0	900.0	630.0	912.0	241.0	1044.0	805.0	561.0	1408.0	560.0	582.0	746.2	801.5	692.3	693.8	868.0	380.0	590	860.0	760		
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	832.0	NA	NA	NA	NA	NA	NA	10.0	NA	540.0	620.0	303.6	726.0	744.8	NA	930.0	490.0	610	650.0	710			
CH5	NA	NA	NA	NA	809.0	628.0	730-791	587-613	605-954	747.0	560.0	610.0	2000.0	1014.0	576-868	513-684	780.0	464.0	775.0	640.0	1092.0	841.0	729.0	384.0	910.0	224.0	858.0	825.0	502.0	1230.0	740.0	496.0	626.4	552.0	712.8	616.0	713.0	420.0	650	630.0	580		
CH5a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	468/546b	570.0	650.0	875.0	NA	957.0	936.0	NA	NA	223.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CH6	NA	NA	NA	NA	NA	NA	NA	NA	NA	503.0	530.0	320.0	880.0	465.0	275.0	187.0	312/338b	221.0	351.0	476.0	307/267b	416.0	520.0	405.0	432.0	95.0	442.0	500.0	834.0	643.0	470.0	395.0	293.8	288.4	420.8	NA	179.8	250.0	250	340.0	350		
CH6a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	416.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	457.6	NA	NA	NA	NA	NA		
CH7	NA	NA	NA	283.0	329.0	216.0	315-386	225-383	253-338	354.0	330.0	390.0	650.0	364-406b	448-494	188-200	260.0	160/260b	400.0	432.0	672.0	275.0	368.0	475.0	442.0	98.0	420.0	520.0	226.0	481.0	380.0	260.0	181.7	193.7	285.2	154.9	133.3	190.0	140	160.0	160		
CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	244.0	248.0	297.0	NA	540.0	312.0	NA	NA	448.0	NA	377.0	312.0	284.0	521.0	NA	NA	341.6	275.0	NA	NA	496.0	170.0	140	200.0	160		
CH7b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	378.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S1	700.0	834.0	NA	NA	NA	NA	NA	861-883	784-1011	966.0	490.0	910.0	1400.0	783.0	875.0	500.0	832.0	650.0	414.0	191.0	768.0	NA	858.0	754.0	825.0	201.0	682.0	NA	NA	NA	740.0	564.0	750.4	801.9	655.2	874.5	1519.0	620	720	750.0	710		
S5	700.0	876.0	NA	NA	NA	NA	NA	749-923	854-1022	852.0	690.0	720.0	1600.0	952.0	729.0	450.0	702.0	810.0	621.0	86.0	910.0	896.0	783.0	868.0	728.0	253.0	840.0	NA	NA	NA	880.0	580.0	635.0	821.7	784.0	745.0	1116.0	730	660	690.0	680		
S7	738.0	795.0	NA	NA	NA	NA	NA	627-711	542-934	1097.0	1100.0	550.0	2000.0	870.0	650.0	496.0	546.0	567.0	625.0	880.0	624/696b	702.0	780.0	896.0	858.0	186.0	832/930a	NA	NA	NA	810.0	504.0	600.0	719.2	662.2	750.0	558.0	540	650	550.0	610		
S8	NA	NA	NA	NA	NA	NA	NA	922.0	879-963	NA	580.0	560.0	1900.0	924.0	841.0	540.0	676.0	728.0	750.0	912.0	925.0	598.0	754.0	600.0	667.0	258.0	672.0	NA	NA	NA	900.0	568.0	525.8	669.0	598.4	795.6	713.0	610	720	700.0	640		
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
S8b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7 REF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	89.9	99.1	123.6	78.9	93.0	100	92	96.0	71		
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.6	47.7	37.1	NA	NA	70	83	120.0	59		
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35.3	34.2	52.0	46.6	55.8	34	41	50.0	47		
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53.4	54.2	52.5	58.6	80.6	72	43	53.0	40		

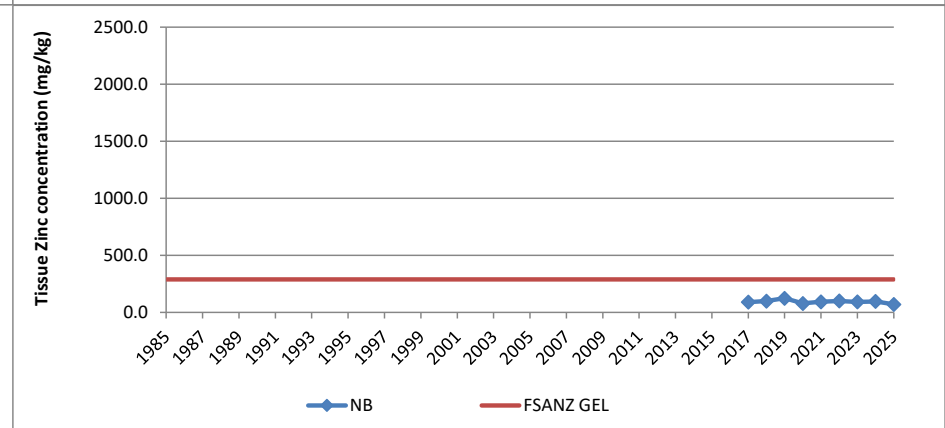
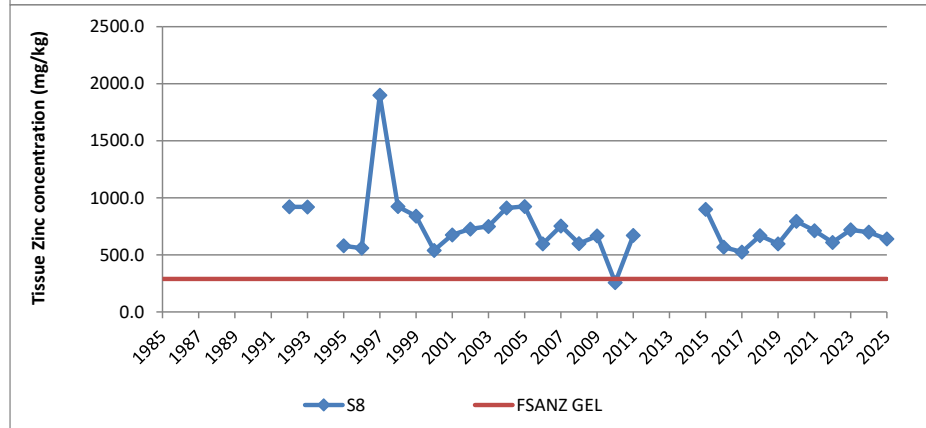
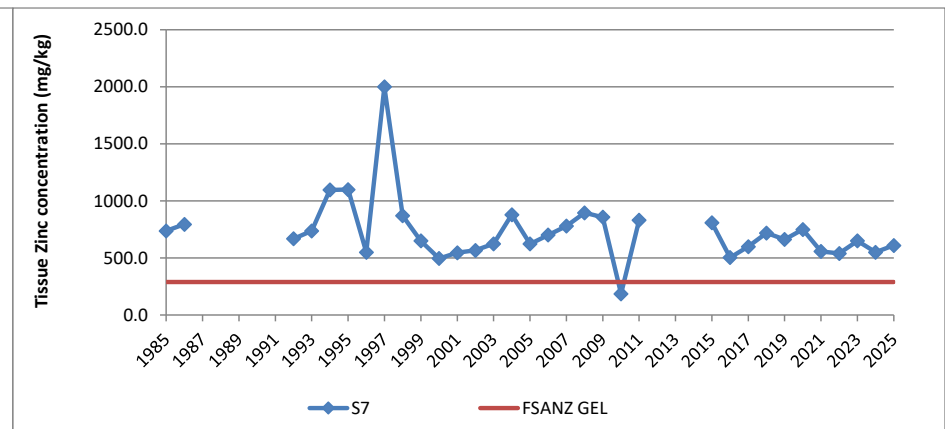
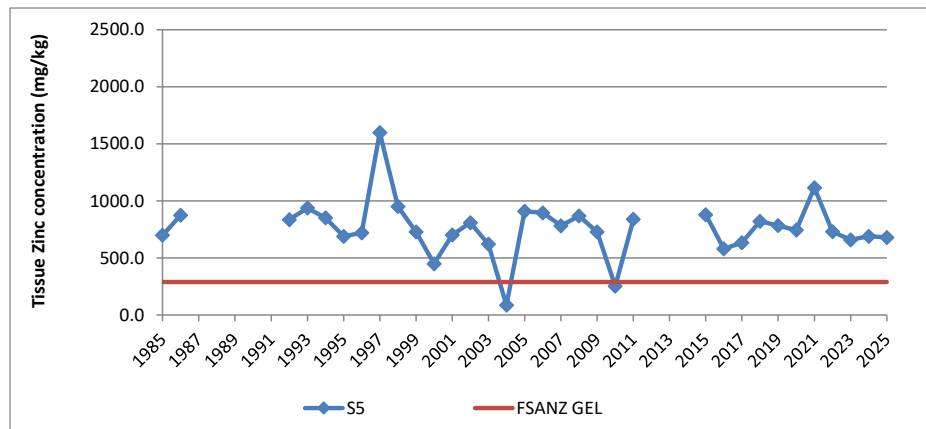
Guideline Exceedences

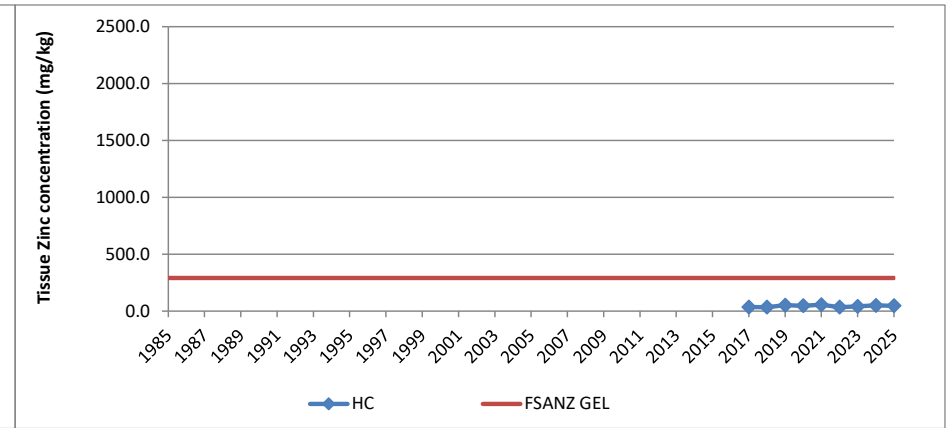
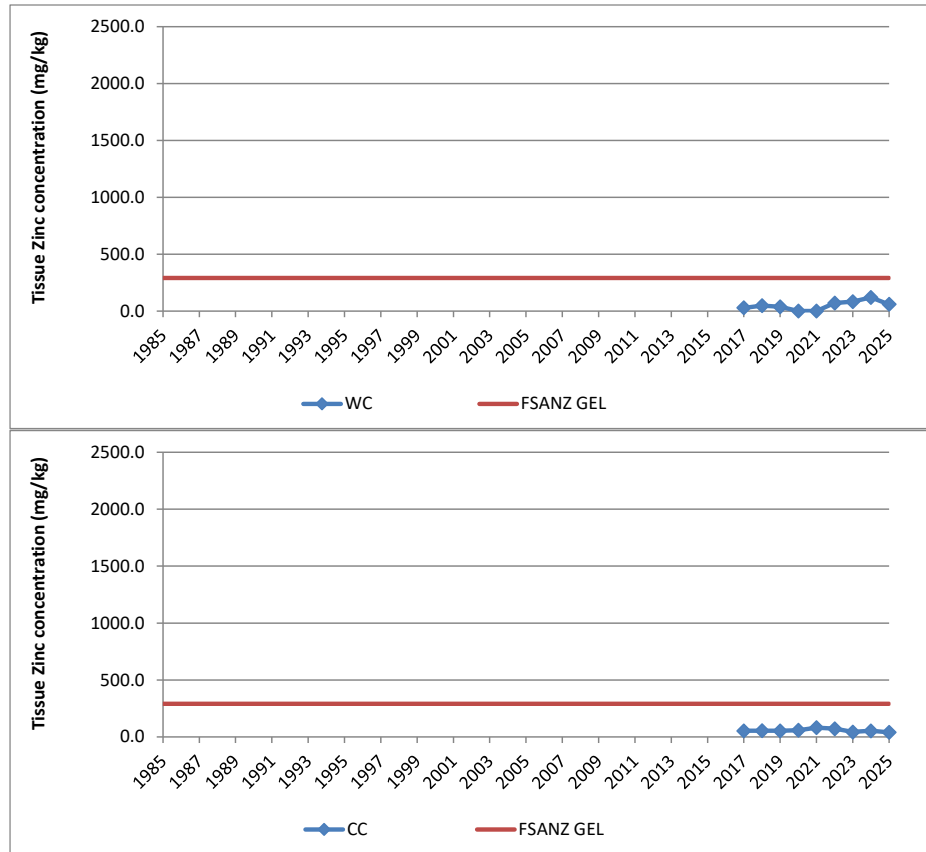
Not Sampled

Half the LOR







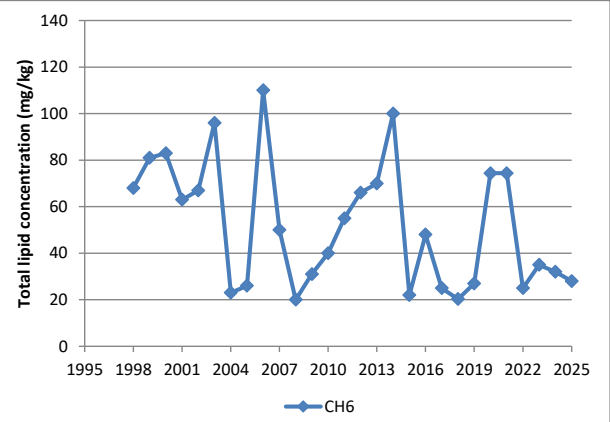
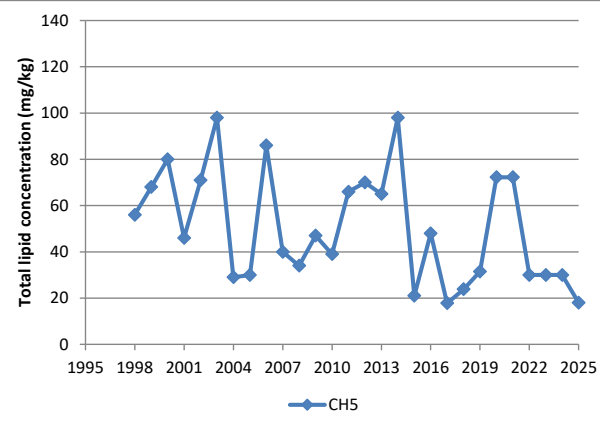
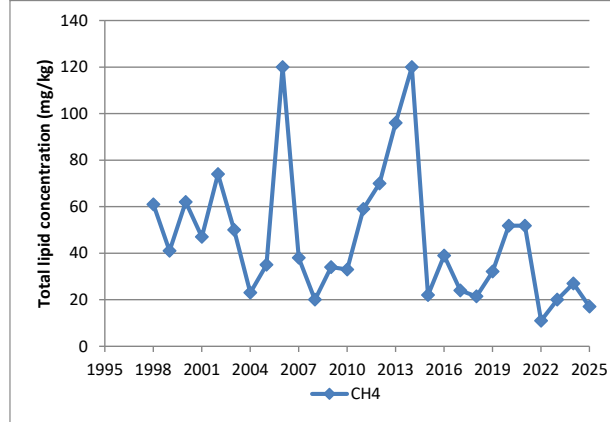
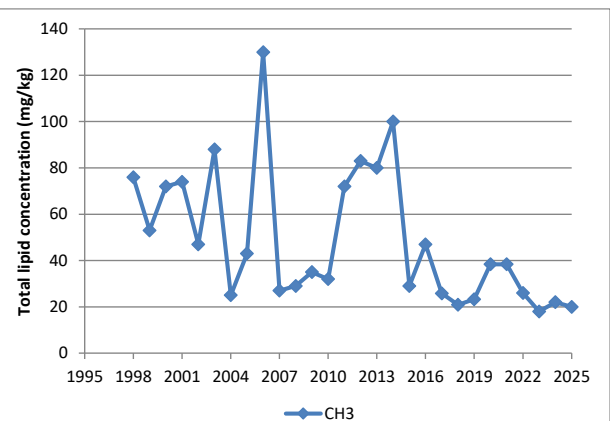
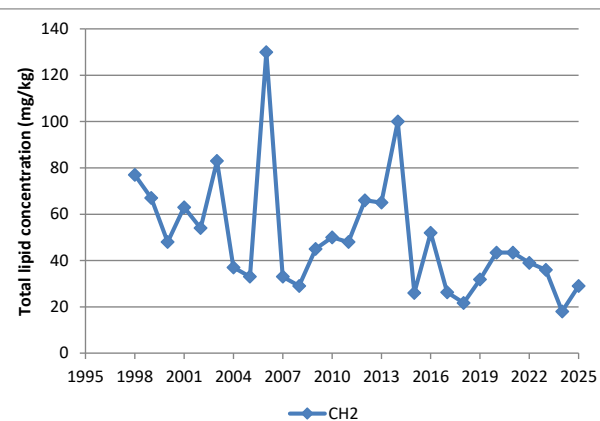
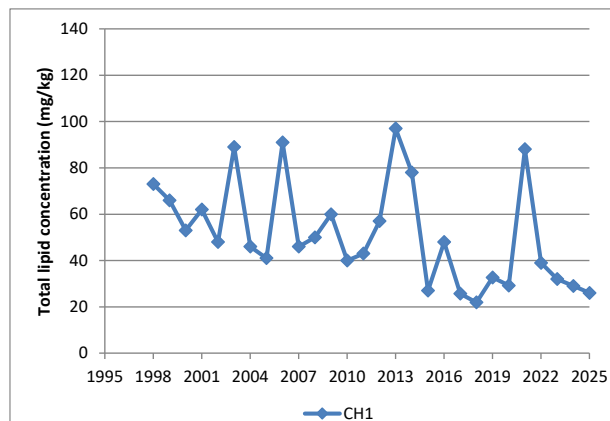


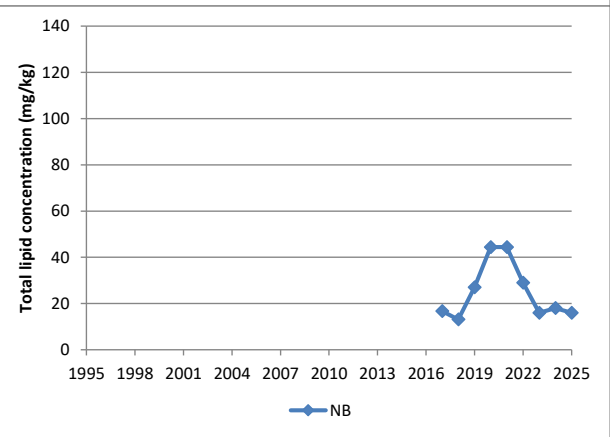
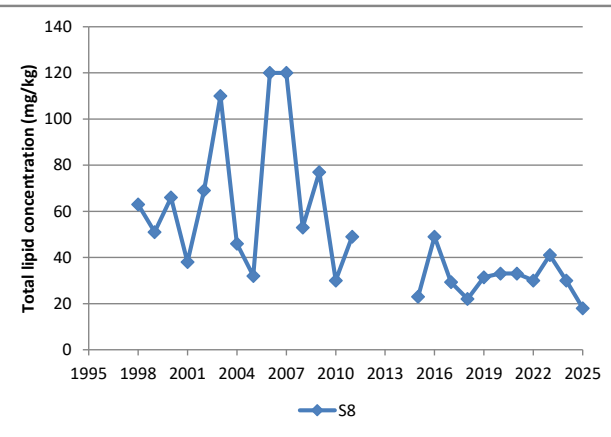
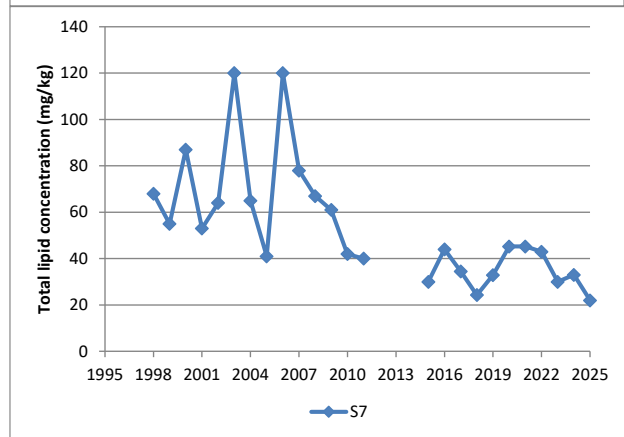
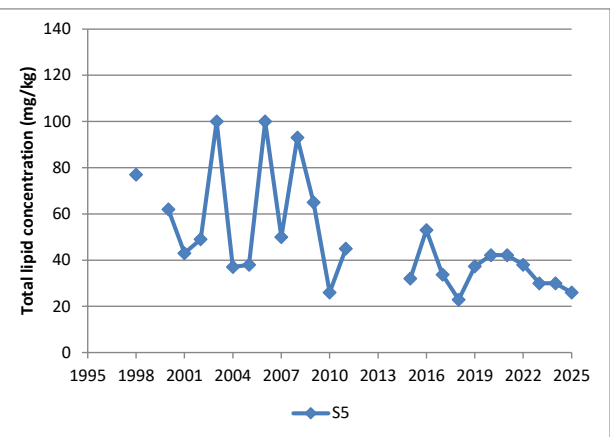
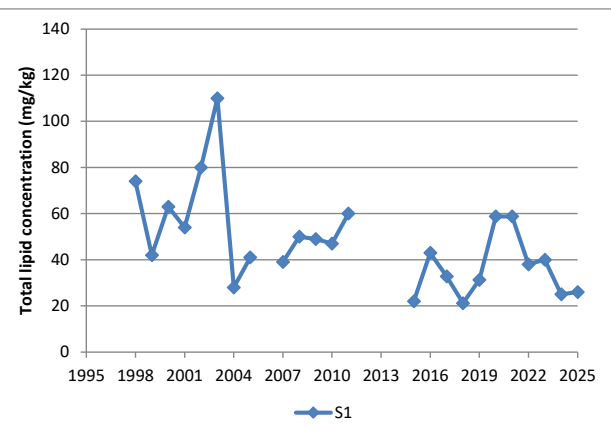
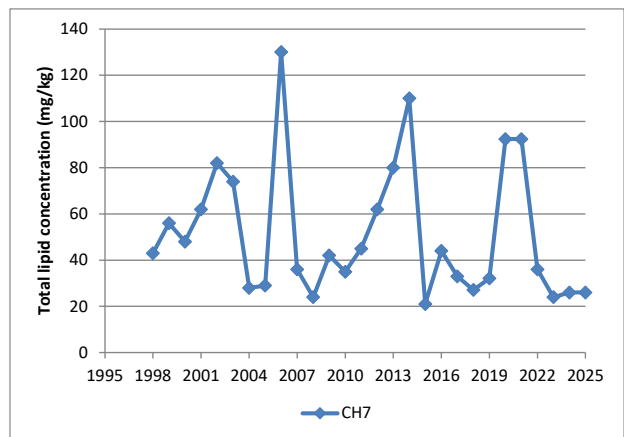
Moisture Content

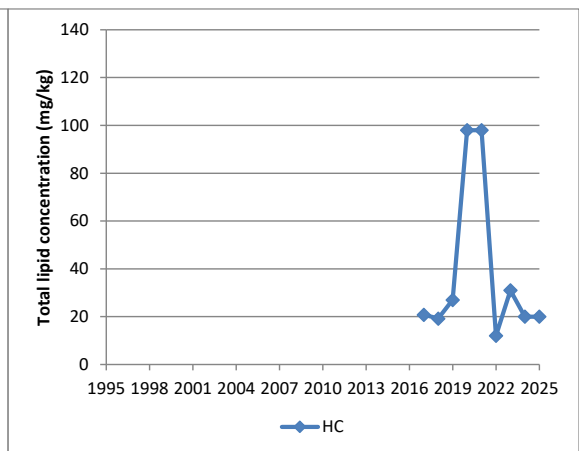
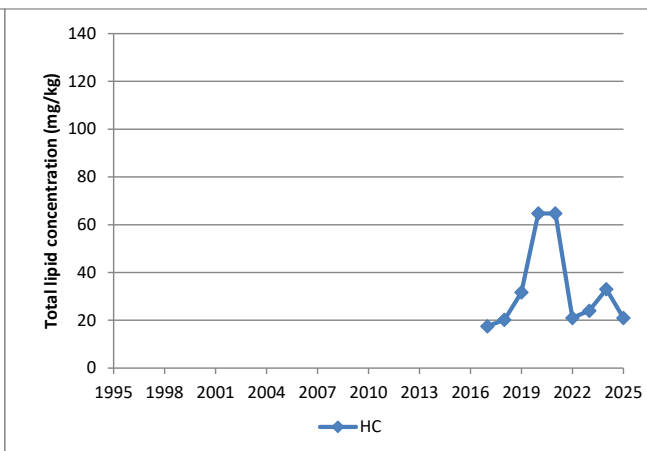
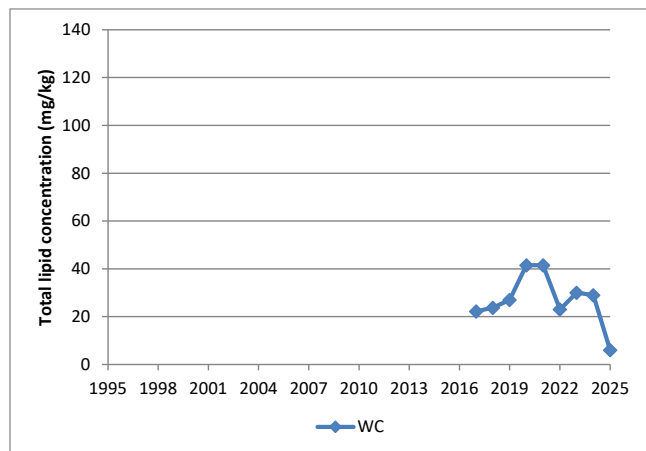
Moisture Content %																												
Site	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CH1	70	74	70	74	75	76	79	76	71	70	74	73	67	69	78	77	75	78	72.1	74.4	73.8	69.6	72.7	74.1	68.6	72	76	73.9
CH1a	NA	NA	NA	NA	NA	73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH2	73	73	71	74	72	77	79	76	70	69	76	73	63	68	73	80	76	74.2	70	73.7	76.9	72	72.5	69	71.2	70.7	74	71.4
CH2a	NA	NA	NA	NA	NA	74	NA	NA	NA	NA	NA	NA	NA	67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH3	73	73	72	73	70	76	73	72	72	68	75	72	63	71	76	75	73	78.8	66.5	72.3	70.8	72.8	76.3	74.4	74.3	81.2	75	75.2
CH3a	NA	NA	NA	NA	NA	NA	NA	74	74	NA	72	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH4	72-73	71	71	71	71	76	76	72	72	70	79	76	65	70	77	73	75	78.4	70.9	71.3	77.1	69.9	71.1	74.1	81.7	77.3	75	73.4
CH4a	NA	NA	NA	NA	NA	73	NA	74	NA	NA	73	NA	NA	71	NA	76	NA	78.4	70.5	74.7	75.8	73.4	NA	72.7	74.4	81.3	75	75.3
CH5	74	76	64	68	71	75	80	74	71	73	76	74	62	70	75	77	75	73.2	73.9	73.9	76	70.3	72	74.2	75.8	69.8	74	73.8
CH5a	NA	72	73	72	70	74	75	NA	70	74	NA	74	64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH6	69	75	74	71	72	73	72	69	74	74	73	73	66	66	75	72	73	73.5	73.7	77.4	79.4	73.7	NA	87.6	72	74.7	75	72.6
CH6a	NA	NA	NA	NA	NA	NA	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7	72	74	73	72	71	75	73	72	75	77	75	74	65	68	74	76	72	78.9	69.1	76.4	73.1	64.8	74.6	78	71.3	75	80	73.2
CH7a	71	71-72	72	71	69	73	NA	73	74	NA	NA	72	NA	NA	74	69	73	NA	NA	75.6	75	70.6	NA	72.6	74.2	82.9	78	74.2
CH7b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S1	73	75	75	78	74	77	78	76	78	74	75	64	69	NA	NA	NA	NA	78.6	71.8	73.2	75.7	72.7	73.5	77.4	71.2	72	75	74.1
S5	72	73	75	72	73	77	80	74	72	73	75	72	61	70	NA	NA	NA	76.9	69.5	74.6	75.1	72	70.2	71.9	63.4	70.9	74	71.8
S7	71	74	69	72	73	75	78	76	74	70	72	74	62	68	NA	NA	NA	78.3	72	75	75.2	69.9	75	73.4	51.5	70.5	72	73.6
S7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8	72	71	73	71	72	75	76	75	74	74	75	71	62	68	NA	NA	NA	79.6	71.6	76.1	77.7	72.8	69.4	74.6	70.1	68.5	73	75.9
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	76	72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8d	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	76	71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	73-75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R21	72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7 REF	71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	69	76.4	69.1	58.5	80.7	68.8	68.7	80	73.7
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	74.9	71.5	64.1	68.1	66.7	70.5	73	74.2
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.7	69.4	66.7	81.5	78	68.6	73	75.4
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	71.5	69.1	70.7	65	76.5	70.1	81	74.2
D01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.8	71	71.3	73.9	71	74	74	77
D02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.4	71	70.8	72.6	76	73	73	75

Lipid Content

mg/kg wet weight																												
Site	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CH1	73	66	53	62	48	89	46	41	91	46	50	60	40	43	57	97	78	27	48	25.7	21.9	32.7	29.2	88.06	39	32	29	26
CH1a	NA	NA	NA	NA	NA	68	NA	NA	NA	NA	NA	NA	NA	NA	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH2	77	67	48	63	54	83	37	33	130	33	29	45	50	48	66	65	100	26	52	26.3	21.7	31.8	25.5	43.4	39	36	18	29
CH2a	NA	NA	NA	NA	NA	86	31	NA	NA	NA	NA	NA	NA	NA	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH3	76	53	72	74	47	88	25	43	130	27	29	35	32	72	83	80	100	29	47	25.8	20.9	23.3	19.4	38.4	26	18	22	20
CH3a	NA	NA	NA	NA	NA	NA	NA	38	84	NA	55	29	NA	NA	NA	NA	NA	NA	46	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH4	61	41	62	47	74	50	23	35	120	38	20	34	33	59	70	96	120	22	39	24	21.4	32.1	30.8	51.8	11	20	27	17
CH4a	60	56	NA	NA	NA	60	30	38	NA	NA	54	NA	NA	NA	NA	69	NA	NA	41	29	19.6	25.9	NA	95.55	19	17	23	19
CH5	56	68	80	46	71	98	29	30	86	40	34	47	39	66	70	65	98	21	38	17.8	23.8	31.5	31.2	72.24	30	30	30	18
CH5a	NA	43	60	49	67	84	36	NA	82	24	NA	48	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH6	68	81	83	63	67	96	23	26	110	50	20	31	40	55	66	70	100	22	48	25	20.3	27	24.6	74.4	25	35	32	28
CH6a	NA	NA	NA	NA	NA	NA	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7	43	56-85	48	62	82	74	28	29	130	36	24	42	35	45	62	80	110	21	44	33	27.1	32.1	22.4	92.4	36	24	26	26
CH7a	64	NA	67	57	69	110	NA	32	120	NA	NA	41	NA	46	71	79	110	NA	NA	35.2	25	26.5	NA	82.2	31	19	26	27
CH7d	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	49	NA	NA	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S1	74	42	63	54	80	110	28	41	NA	39	50	49	47	60	NA	NA	NA	22	43	32.8	21.2	31.3	28.9	58.76	38	40	25	26
S5	77	NA	62	43	49	100	37	38	100	50	93	65	26	45	NA	NA	NA	32	53	33.7	22.9	37.3	33.8	42.15	38	30	30	26
S7	68	55	87	53	64	120	65	41	120	78	67	61	42	40/55a	NA	NA	NA	30	44	34.5	24.3	32.9	25.1	45.22	43	30	33	22
S8	63	51	66	38	69	110	46	32	120	120	53	77	30	49	NA	NA	NA	23	49	29.3	22	31.4	23.4	33.02	30	41	30	18
S8a	NA	NA	NA	NA	NA	NA	NA	NA	NA	34	83	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8b	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R20	79-81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
R21	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CH7 REF	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.7	13.1	27	26.8	44.39	29	16	18	16
WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.2	23.7	27	20.9	41.47	23	30	29	6
HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.5	20.2	31.7	24.3	64.75	21	24	33	21
CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.8	19.2	27	22.1	98	12	31	20	20







Hydrocarbons

Site	Analyte	Total saturated hydrocarbons 1989-2001 - ug/kg wet weight										
		Dec-89	Jul-91	Nov-93	Jul-94	Jun-95	Jun-96	May-97	May-98	May-99	Jun-00	Apr-01
CH1	TS	73	1320	6600	<2500	<40	<40	<40	<40	<40	<40	<40
	PAH	29	<1-5	NA	NA	<1-5	<1-5	<1-5	<1-5	<1-5	<1-5	<5
CH2	TS	NA	NA	NA	NA	<40	<40	<40	<40	<40	B<40/<40	<40
	PAH	NA	NA	NA	NA	<1-5	<1-5	<1-5	<1-5	<1-5	B<5/<5	<5
CH3	TS	NA	NA	NA	NA	<40	<40	260	<40	<40	B<40/<40	<40
	PAH	NA	NA	NA	NA	<1-5	<1-5	<105	<1-5	<1-5	B<5/<5	<5
CH4	TS	NA	NA	90	<2500	<40	<40	A40/240	A<40/<40	A<40/<40	A<40/B<40/<40	<40
	PAH	NA	NA	NA	NA	<1-5	<1-5	<1-5	<1-5	A<1-5/<1-5	A<5/B<5/<5	<5
CH5	TS	NA	NA	NA	NA	<40	<40	<40	<40	<40	<40	<40
	PAH	NA	NA	NA	NA	<1-5	<1-5	<1-5	<1-5	<1-5	<5	<5
CH6	TS	NA	NA	NA	NA	<40	<40	110	<40	<40	<40	<40
	PAH	NA	NA	NA	NA	<1-5	<1-5	<1-5	<1-5	<1-5	<5	<5
CH7	TS	1485	1320	1330	<2500	<40	<40	90	A<40/<40	A<40/<40	A<40/<40	A<40/<40
	PAH	191	<1-5	NA	NA	<1-5	<1-5	<1-5	<1-5	A<1-5/<1-5	A<5/<5	A<5/<5
R21	TS	NA	NA	NA	NA	NA	NA	NA	<40	NA	NA	NA
	PAH	NA	NA	NA	NA	NA	NA	NA	<1-5	NA	NA	NA

Site	Analyte	ug/kg dry weight												
		May-02	May-03	May-04	May-05	May-06	Jul-07	May-08	Jun-09	Aug-10	Jun-11	Aug-12	Aug-13	Aug-14
CH1	TS	<40	A<40/<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
	PAH	<5	A<5/<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
CH2	TS	A<40/<40	<40	A<40/<40	<40	<40	A<40/<40	<40	<40	<40	a<40/<40	B<40/<40	B<40/<40	B<40/<40
	PAH	A<5/<5	<5	A<5/<5	<5	<5	A<5/<5	<5	<5	A<5/<5	<5	B<5/<5	B<5/<5	B<5/<5
CH3	TS	<40	<40	<40	A<40/<40	A<40/<40	A<40/<40	<40	A<40/<40	<40	<40	<40	<40	<40
	PAH	<5	<5	<5	A<5/<5	A<5/<5	A<5/<5	<5	A<5/<5	<5	<5	<5	<5	<5
CH4	TS	A<40/<40	A<40/<40	A<40/<40	<40	<40	A<40/<40	<40	<40	A<40/B<40/<40	A<40/<40	<40	<40	<40
	PAH	A<5/<5	A<5/<5	A<5/<5	<5	<5	A<5/<5	<5	<5	<5/B<5	<5	<5	<5	<5
CH5	TS	<40	<40	<40	<40	<40	<40	<40	A<40/<40	<40	<40	<40	<40	<40
	PAH	<5	<5	<5	<5	<5	<5	<5	A<5/<5	<5	<5	<5	<5	<5
CH6	TS	<40	<40	<40	<40	<40	<40	<40	A<40/<40	<40	<40	B<40/<40	B<40/<40	B<40/<40
	PAH	<5	<5	<5	<5	<5	<5	<5	A<5/<5	<5	<5	B<5/<5	B<5/<5	B<5/<5
CH7	TS	<40	<40	<40	A<40/<40	A<40/<40	<40	B<40/<40	<40	<40	B<40/<40	B<40/<40	<40	<40
	PAH	<5	<5	<5	A<5/<5	A<5/<5	<5	B<5/<5	<5	<5	<5	<5	<5	<5

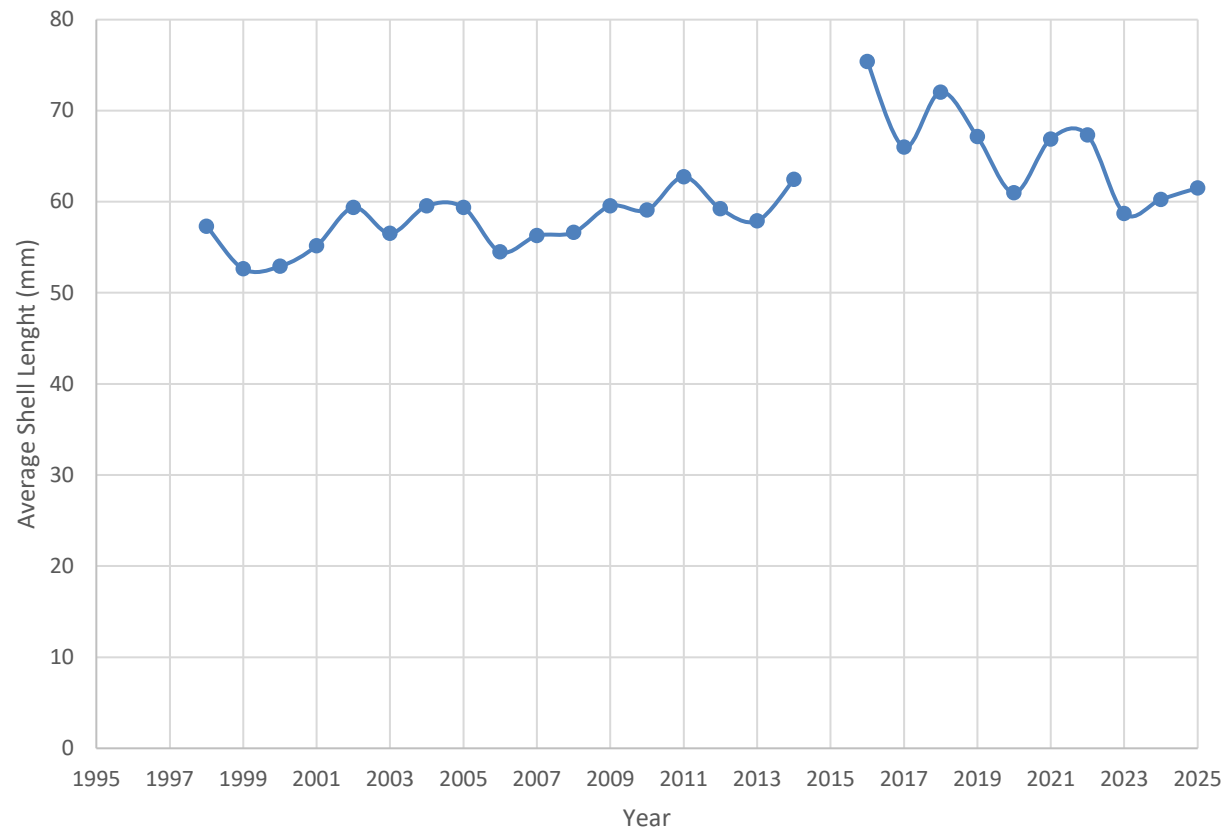
Site	ug/kg wet weight				mg/kg wet weight				ug/kg wet weight	mg/kg wet weight					mg/kg wet weight					ug/kg wet weight	mg/kg wet weight					ug/kg wet weight
	2015				2016					2017					2018						2019					
	TPH C10-14	TPH C15-28	TPH C29-36	Total PAHs	TPH C10-14	TPH C15-28	TPH C29-36	Total PAHs		TRH C10-C16	TRH C16-C34	TRH C34-C40	Total TRHs	Individual PAHs	TRH C10-C16	TRH C16-C34	TRH C34-C40	Total TRHs	Individual PAHs		TRH C10-C16	TRH C16-C34	TRH C34-C40	Total TRHs	Individual PAHs	
CH1	<20	<100	<100	<240	21	120	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	17		<50	<100	<100	<200	<0.2	
CH2	<20	<100	<100	<240	<20	100	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	15		<50	<100	<100	<200	<0.2	
CH3	<20	<100	<100	<240	29	220	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	12		<50	<100	<100	<200	<0.2	
CH4	<20	<100	<100	<240	<20	110	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	12		<50	<100	<100	<200	<0.2	
CH4a	na	na	na	na	na	na	na	na		160	<100	<100	210	<0.2	<50	<100	<100	<200	10		<50	<100	<100	<200	<0.2	
CH5	<20	<100	<100	<240	<20	160	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	6		<50	<100	<100	<200	<0.2	
CH6	<20	<100	<100	<240	<20	160	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	6		<50	<100	<100	<200	<0.2	
CH7	<20	<100	<100	<240	24	190	<100	<10		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	17		<50	<100	<100	<200	<0.2	
CH7a	na	na	na	na	na	na	na	na		150	<100	<100	200	<0.2	<50	<100	<100	<201	9		<50	<100	<100	<201	<0.2	
S1	<20	<100	<100	<240	<20	120	<100	<10		60	<100	<100	<200	<0.2	<50	<100	<100	<200	10		<50	<100	<100	<200	<0.2	
S5	<20	<100	<100	<240	23	140	<100	<10		68	<100	<100	<200	<0.2	<50	<100	<100	<200	12		<50	<100	<100	<200	<0.2	
S7	<20	<100	<100	<240	<20	120	<100	<10		130	<100	<100	<200	<0.2	<50	<100	<100	<200	16		<50	<100	<100	<200	<0.2	
S8	<20	<100	<100	<240	27	160	<100	<10		92	<100	<100	<200	<0.2	<50	<100	<100	<200	17		<50	<100	<100	<200	<0.2	
DO1	<20	<100	<100	<240	<20	130	<100	<10		NA	NA	NA	NA	<0.2	NA	NA	NA	NA	12		NA	NA	NA	NA	NA	
DO2	<20	<100	<100	<240	22	150	<100	<10		NA	NA	NA	NA	<0.2	NA	NA	NA	NA	11		NA	NA	NA	NA	NA	
NB	NA	NA	NA	NA	NA	NA	NA	NA		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	10		<50	<100	<100	<200	<0.2	
WC	NA	NA	NA	NA	NA	NA	NA	NA		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	15		<50	<100	<100	<200	<0.2	
HC	NA	NA	NA	NA	NA	NA	NA	NA		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	12		<50	<100	<100	<200	<0.2	
CC	NA	NA	NA	NA	NA	NA	NA	NA		<50	<100	<100	<200	<0.2	<50	<100	<100	<200	6		<50	<100	<100	<200	<0.2	

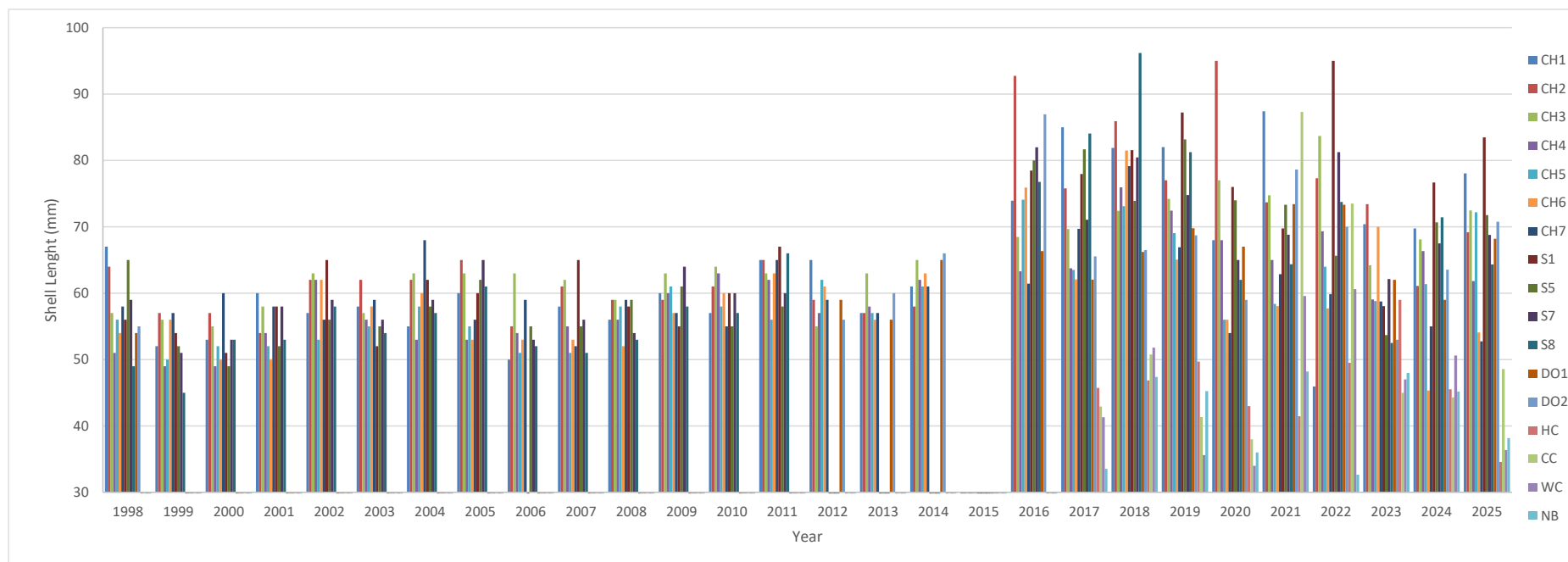
Site	mg/kg wet weight					ug/kg wet weight	mg/kg wet weight	ug/kg wet weight	mg/kg wet weight					ug/kg wet weight	ug/kg wet weight	mg/kg wet weight					ug/kg wet weight	ug/kg wet weight
	2020					2021		2022						2023								
	TRH C10-C16	TRH C16-C34	TRH C34-C40	Total TRHs	Individual PAHs	TPH C10-C40	Total PAHs	TRH C10-C16	TRH C16-C34	TRH C34-C40	Total TRHs	Individual PAHs	Total PAHs	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-36	Individual PAHs	Total PAHs			
CH1	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH2	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH3	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH4	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH4a	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH5	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH6	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH7	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CH7a	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
S1	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
S5	<25	<100	<100	<100	3	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
S7	37	230	<100	340	4	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	93	430	201	<0.02	<0.02			
S8	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
DO1	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	NA	NA	NA	NA	<0.02	<0.02			
DO2	<25	<100	<100	<100	<2.0	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	NA	NA	NA	NA	<0.02	<0.02			
NB	<25	<100	<100	<100	3	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
WC	<25	<100	<100	<100	3	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
HC	<25	<100	<100	<100	4	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			
CC	<25	<100	<100	<100	5	<0.04	<0.005	<25	<50	<50	<125	<0.02	<0.02	<25	<50	<100	<100	<0.02	<0.02			

Site	mg/kg wet weight				ug/kg wet weight	ug/kg wet weight	mg/kg wet weight				ug/kg wet weight	ug/kg wet weight
	2024						2025					
	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-36	Individual PAHs	Total PAHs	TPH C6-C9	TPH C10-C14	TPH C15-C28	TPH C29-36	Individual PAHs	Total PAHs
CH1	<25	<25	<100	<100	<0.02	<0.02	<25	<25	730	<100	<0.02	<0.02
CH2	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
CH3	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
CH4	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
CH4a	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
CH5	<25	<25	<100	<100	<0.02	<0.02	<25	<25	270	<100	<0.02	<0.02
CH6	<25	<25	<100	<100	<0.02	<0.02	<25	<25	560	<100	<0.02	<0.02
CH7	<25	<25	<100	<100	<0.02	<0.02	<25	<25	460	<100	<0.02	<0.02
CH7a	<25	<25	<100	<100	<0.02	<0.02	<25	<25	100	<100	<0.02	<0.02
S1	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
S5	<25	<25	<100	<100	<0.02	<0.02	<25	<25	210	<100	<0.02	<0.02
S7	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
S8	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
DO1	NA	NA	NA	NA	<0.02	<0.02	NA	NA	NA	NA	NA	NA
DO2	NA	NA	NA	NA	<0.02	<0.02	NA	NA	NA	NA	NA	NA
NB	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
WC	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
HC	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02
CC	<25	<25	<100	<100	<0.02	<0.02	<25	<25	<100	<100	<0.02	<0.02

Shell Length

Location		Average shell length (mm)																											
Replicate Site	Site	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
NA	CH1	67	52	53	60	57	58	55	60	50	58	56	60	57	65	65	57	61	NA	74	85	82	82	68	87	46	70	70	78
NA	CH2	64	57	57	54	62	62	62	65	55	61	59	59	61	65	59	57	58	NA	93	76	86	77	95	74	77	73	61	69
NA	CH3	57	56	55	58	63	57	63	63	63	62	59	63	64	63	55	63	65	NA	68	70	72	74	77	75	84	64	68	72
NA	CH4	51	49	49	54	62	56	53	53	54	55	56	60	63	62	57	58	62	NA	63	64	76	72	68	65	69	59	66	62
NA	CH5	56	50	52	52	53	55	58	55	51	51	58	61	58	56	62	57	61	NA	74	64	73	69	56	58	64	59	61	72
NA	CH6	54	56	50	50	62	58	60	53	53	53	52	57	60	63	61	56	63	NA	76	62	82	65	56	58	58	70	45	54
NA	CH7	58	57	60	58	56	59	68	56	59	52	59	57	55	65	59	57	61	NA	61	70	79	67	54	63	60	59	55	53
NA	S1	56	54	51	58	65	52	62	60	-	65	58	55	60	67	NA	NA	NA	NA	78	78	82	87	76	70	95	58	77	83
NA	S5	65	52	49	52	56	55	58	62	55	55	59	61	55	58	NA	NA	NA	NA	80	82	74	83	74	73	66	54	71	72
NA	S7	59	51	53	58	59	56	59	65	53	56	54	64	60	60	NA	NA	NA	NA	82	71	80	75	65	69	81	62	68	69
NA	S8	49	45	53	53	58	54	57	61	52	51	53	58	57	66	NA	NA	NA	NA	77	84	96	81	62	64	74	53	71	64
NA	DO1	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59	56	65	NA	66	62	66	70	67	73	73	62	59	68
NA	DO2	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	60	66	NA	87	66	66	69	59	79	70	53	64	71
NA	HC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	46	47	50	43	41	50	59	46	35
NA	CC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	43	51	41	38	87	74	45	44	49
NA	WC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41	52	36	34	60	61	47	51	36
NA	NB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	34	47	45	36	48	33	48	45	38
CH4a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78	78	73	70	66	69	62	55	NA
CH6a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60	66	NA	NA	NA	NA	NA
CH7a	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81	79	NA	NA	60	77	NA	69	NA
Average		57	53	53	55	59	57	60	59	55	56	57	60	59	63	59	58	62		75	66	72	67	61	67	67	59	60	62



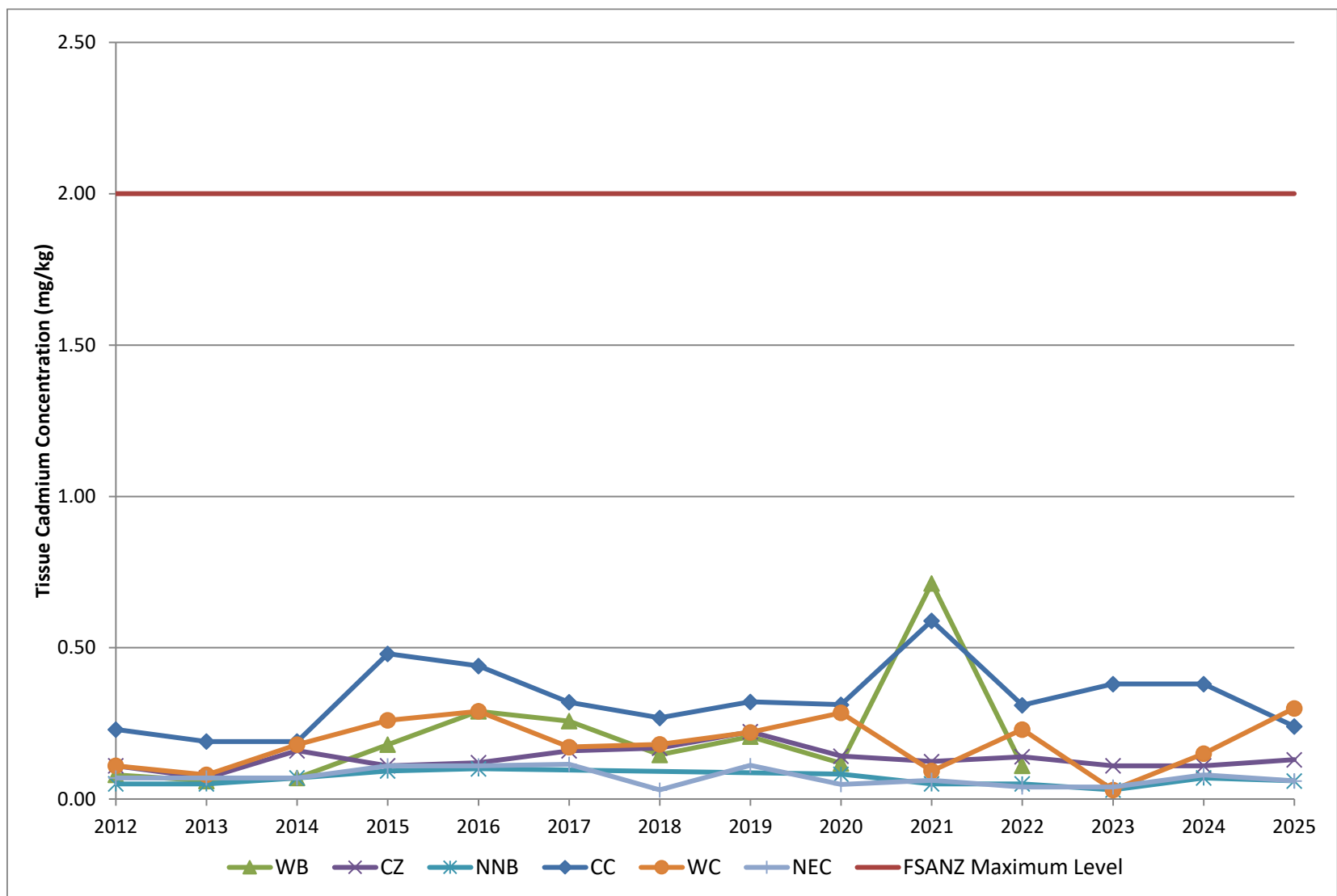


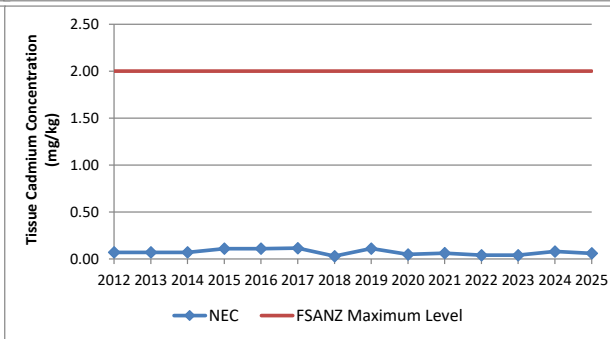
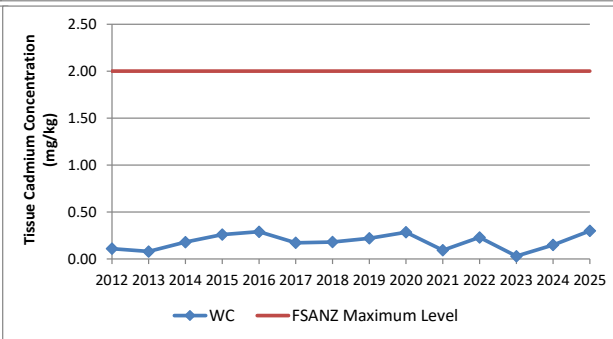
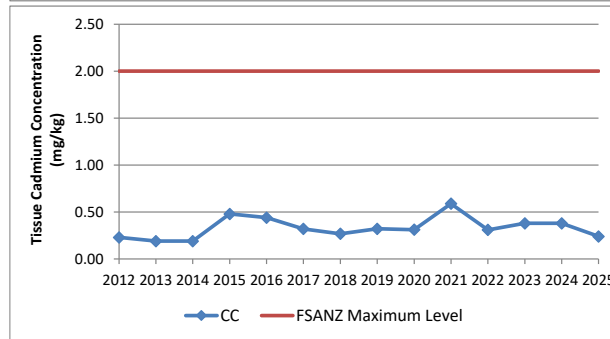
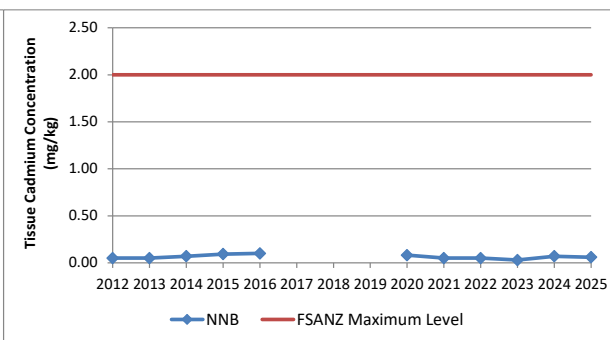
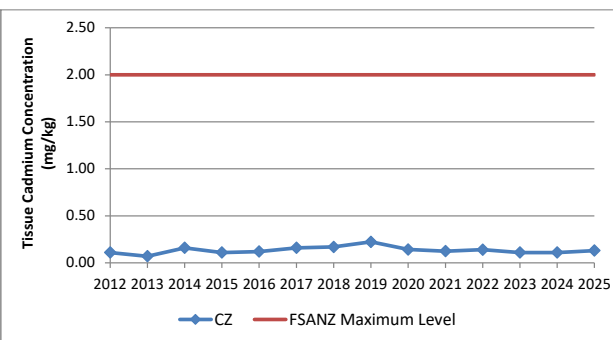
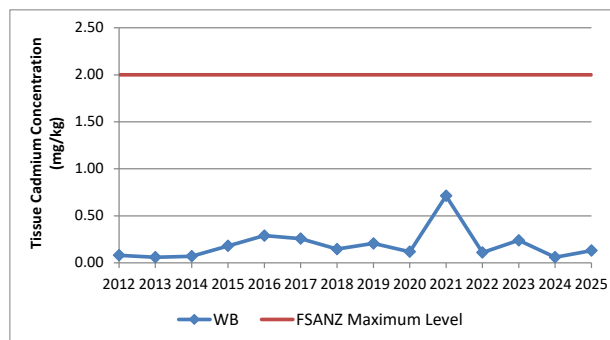
Appendix E. Biota- Mud whelk data and graphs

APPENDIX E-BIOTA:MUD WHELKS

Cadmium

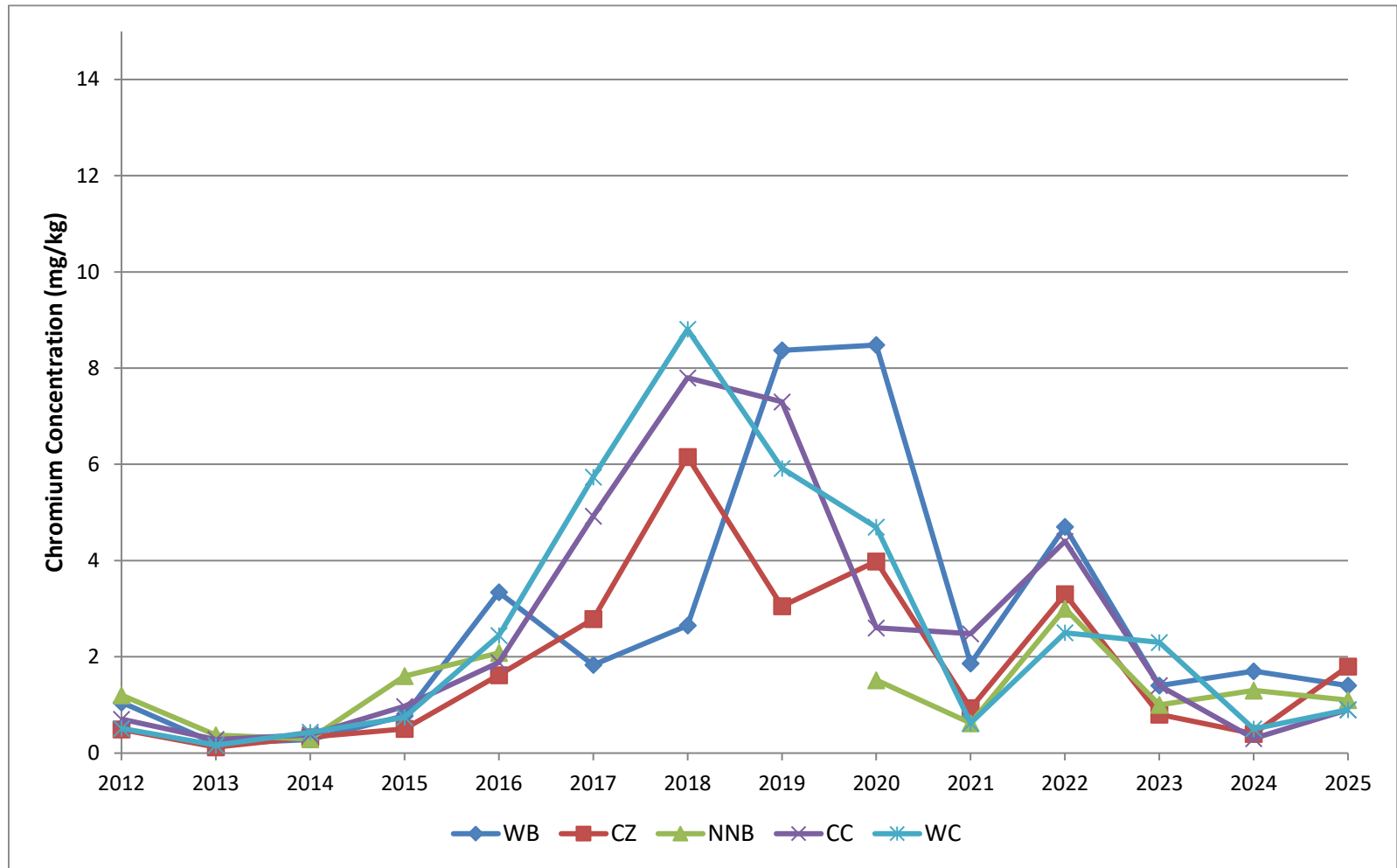
Site	Cadmium (mg/kg wet weight)													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	0.08	0.06	0.07	0.18	0.29	0.26	0.15	0.21	0.12	0.71	0.11	0.24	0.06	0.13
CZ	0.11	0.07	0.16	0.11	0.12	0.16	0.17	0.22	0.14	0.12	0.14	0.11	0.11	0.13
NNB	0.05	0.05	0.07	0.09	0.10				0.08	0.05	0.05	0.03	0.07	0.06
CC	0.23	0.19	0.19	0.48	0.44	0.32	0.27	0.32	0.31	0.59	0.31	0.38	0.38	0.24
WC	0.11	0.08	0.18	0.26	0.29	0.17	0.18	0.22	0.29	0.09	0.23	0.03	0.15	0.30
NEC	0.07	0.07	0.07	0.11	0.11	0.12	0.03	0.11	0.05	0.06	0.04	0.04	0.08	0.06

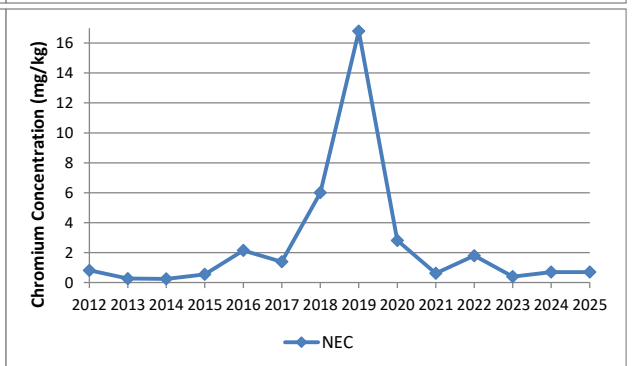
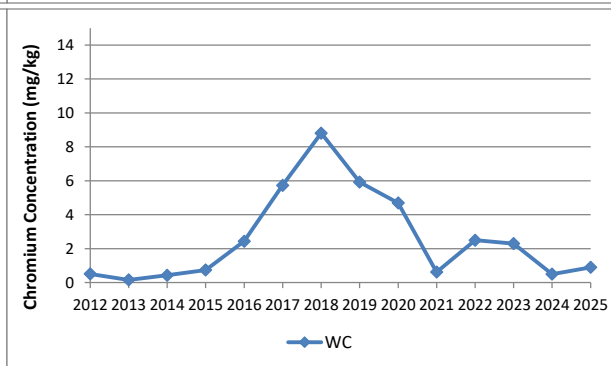
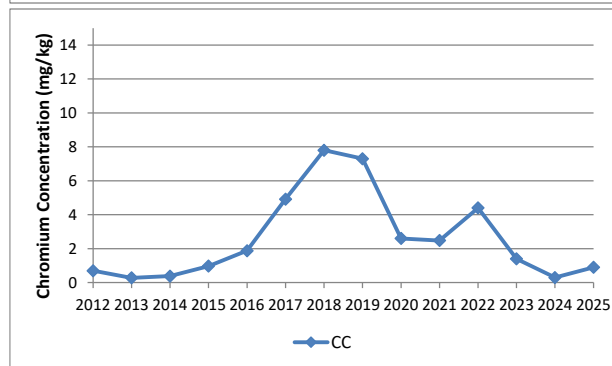
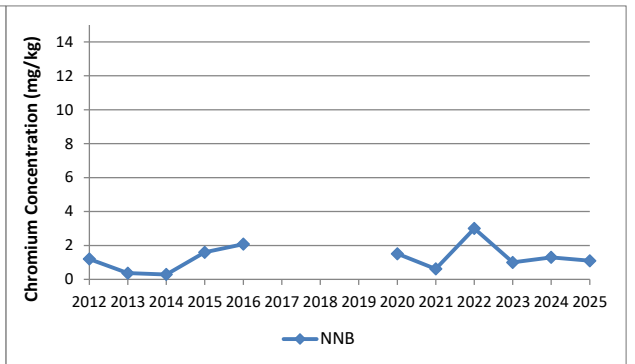
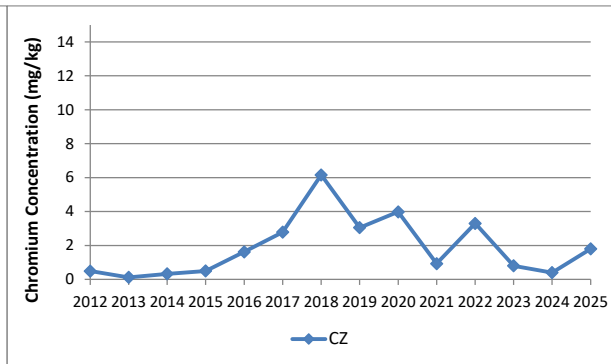
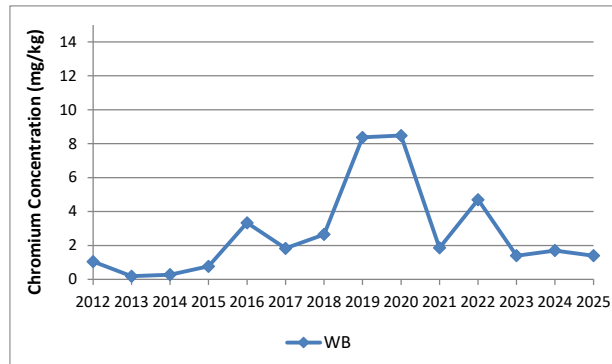




Chromium

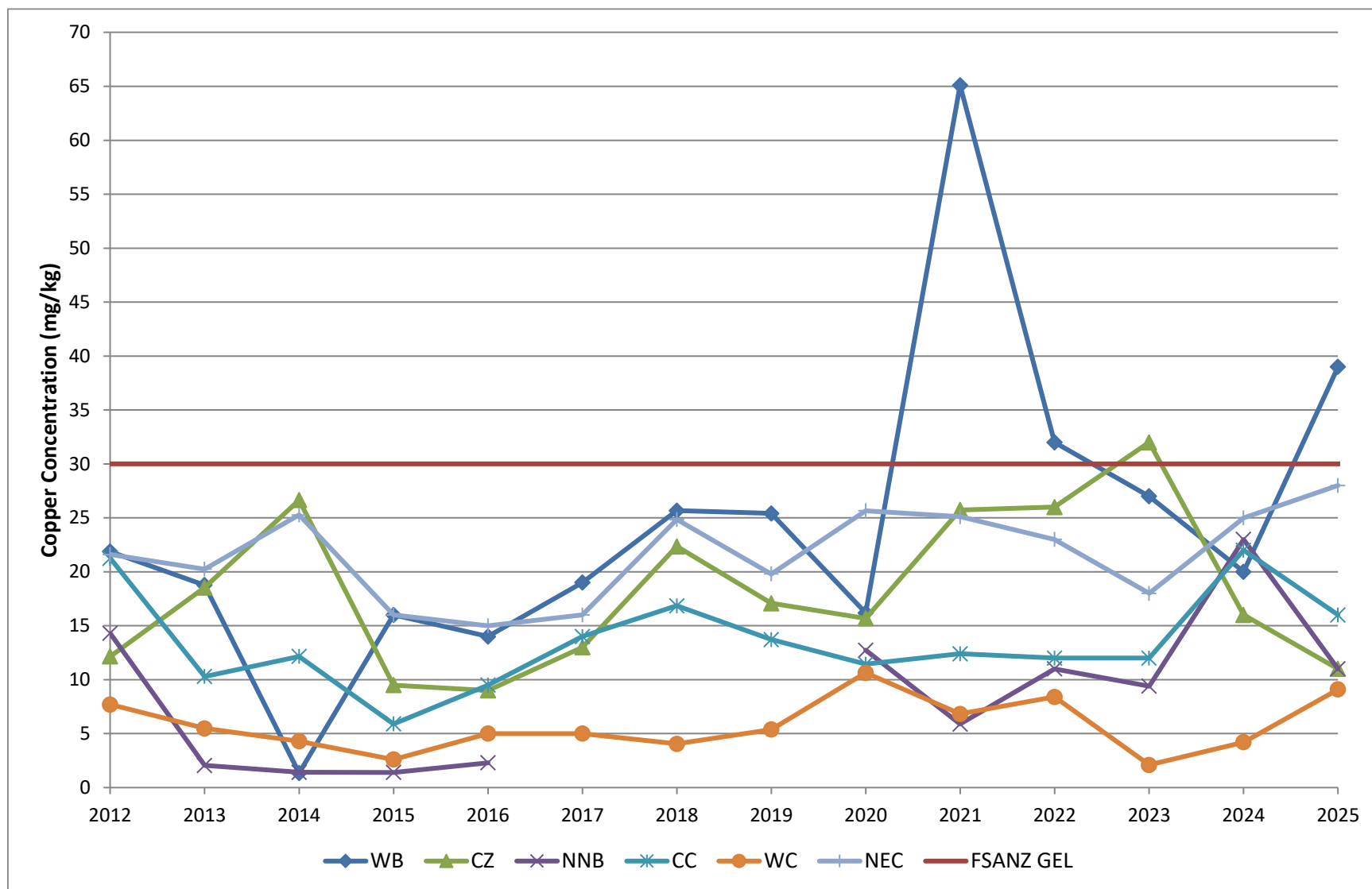
Site	Chromium (mg/kg wet weight)													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	1.05	0.19	0.28	0.77	3.34	1.83	2.6	8.4	8.481	1.86	4.7	1.4	1.7	1.4
CZ	0.49	0.12	0.33	0.5	1.62	2.783	6.156	3.05	3.984	0.93	3.3	0.8	0.4	1.8
NNB	1.2	0.37	0.29	1.6	2.08				1.515	0.62	3	1	1.3	1.1
CC	0.7	0.28	0.38	0.97	1.88	4.92	7.8	7.3	2.6	2.48	4.4	1.4	0.3	0.9
WC	0.51	0.16	0.43	0.74	2.44	5.733	8.806	5.918	4.695	0.62	2.5	2.3	0.5	0.9
NEC	0.82	0.27	0.25	0.55	2.15	1.3936	6.006	16.8	2.82	0.62	1.8	0.4	0.7	0.7

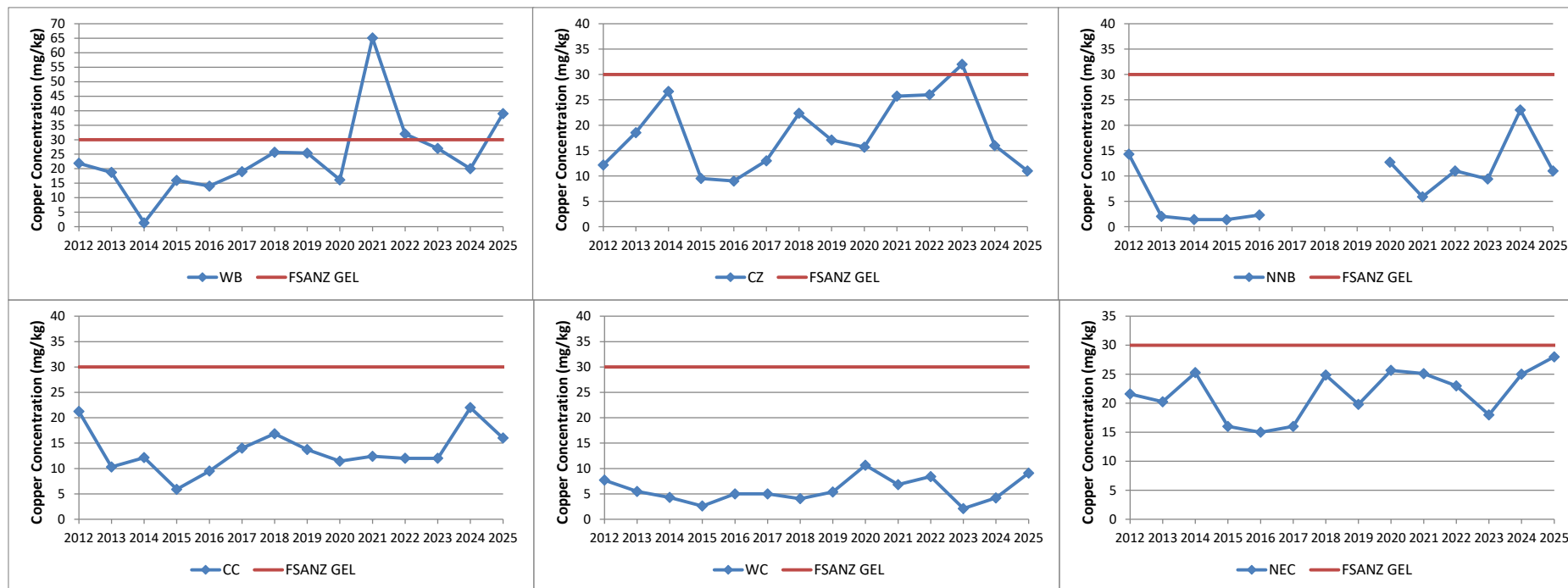




Copper

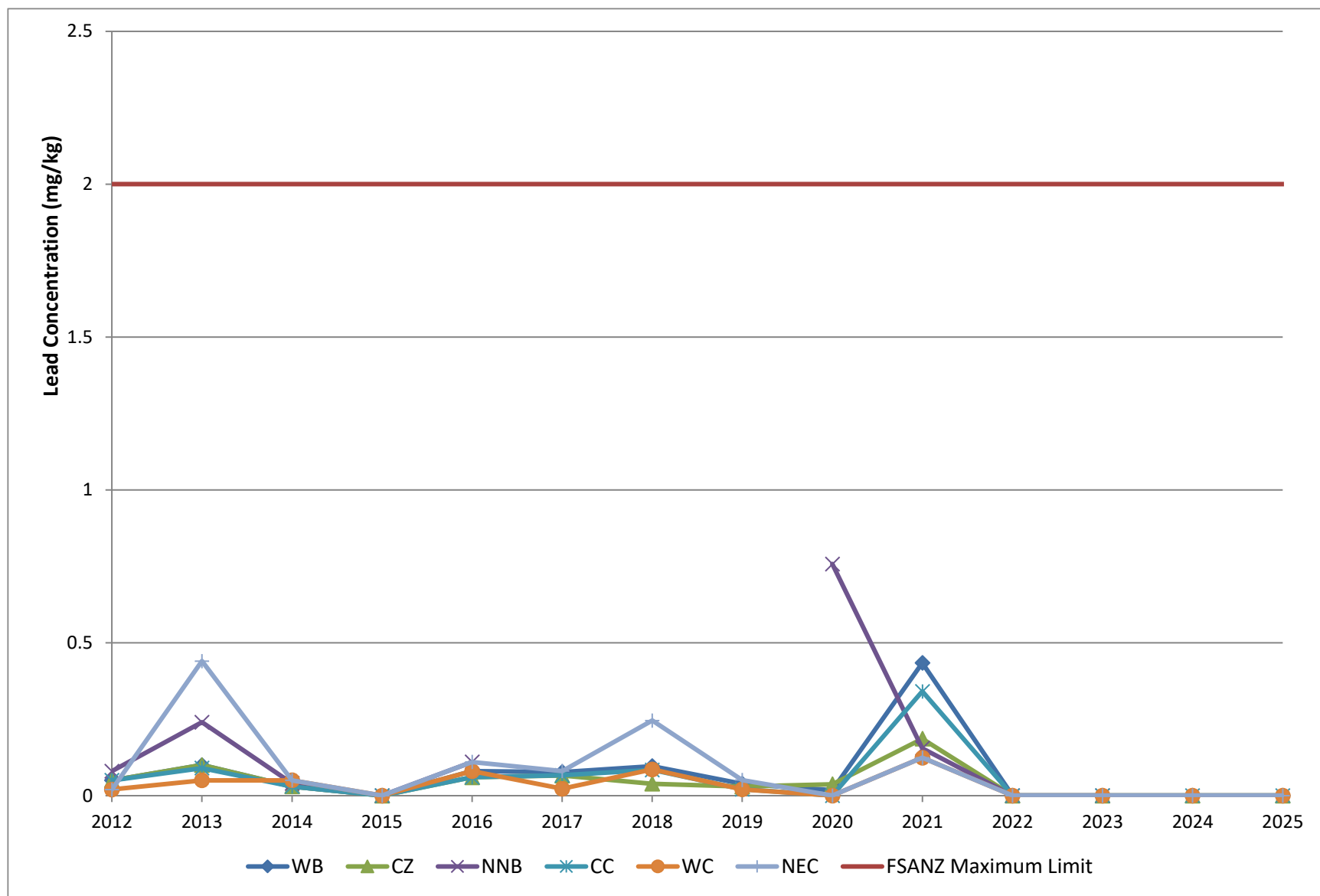
Site	Copper (mg/kg wet weight)													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	21.87	18.76	1.35	16	14	19	25.668	25.415	16.191	65.1	32	27	20	39
CZ	12.15	18.54	26.65	9.5	9	13	22.356	17.08	15.687	25.73	26	32	16	11
NNB	14.3	2.05	1.42	1.4	2.3				12.726	5.89	11	9.4	23	11
CC	21.25	10.3	12.15	5.9	9.5	14	16.848	13.724	11.44	12.4	12	12	22	16
WC	7.7	5.48	4.3	2.6	5	5	4.046	5.38	10.642	6.82	8.4	2.1	4.2	9.1
NEC	21.6	20.25	25.27	16	15	16	24.843	19.8	25.662	25.11	23	18	25	28

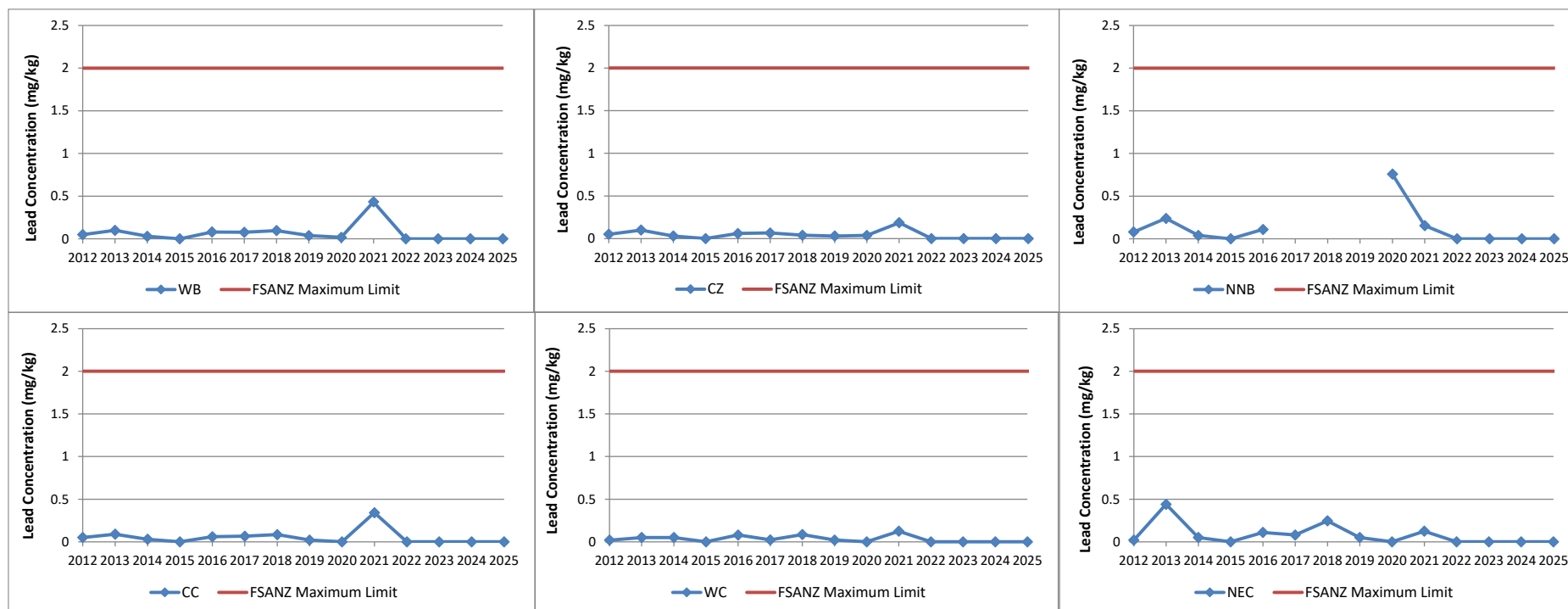




Lead

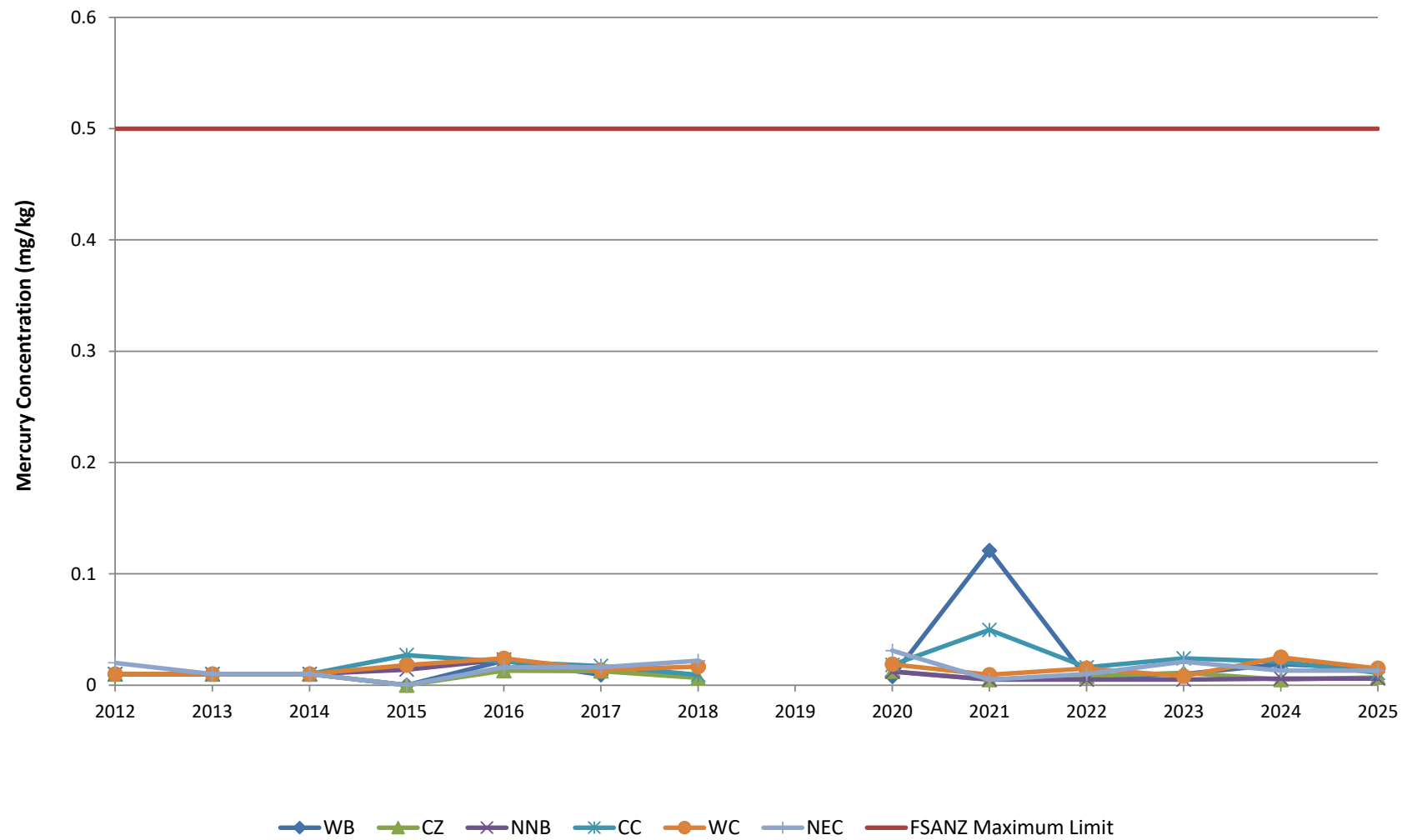
Site	lead (mg/kg) wet weight													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	0.05	0.1	0.03	<0.1	0.08	0.07722	0.10	0.04	0.01825	0.43	<0.2	<0.2	<0.2	<0.2
CZ	0.05	0.1	0.03	<0.1	0.06	0.06578	0.03888	0.02989	0.03735	0.19	<0.2	<0.2	<0.2	<0.2
NNB	0.08	0.24	0.04	<0.1	0.11				0.7575	0.16	<0.2	<0.2	<0.2	<0.2
CC	0.05	0.09	0.03	<0.1	0.06	0.06642	0.08424	0.02073	<0.005	0.34	<0.2	<0.2	<0.2	<0.2
WC	0.02	0.05	0.05	<0.1	0.08	0.02266	0.08568	0.02071	<0.005	0.12	<0.2	<0.2	<0.2	<0.2
NEC	0.02	0.44	0.05	<0.1	0.11	0.0804	0.2457	0.051	<0.005	0.12	<0.2	<0.2	<0.2	<0.2

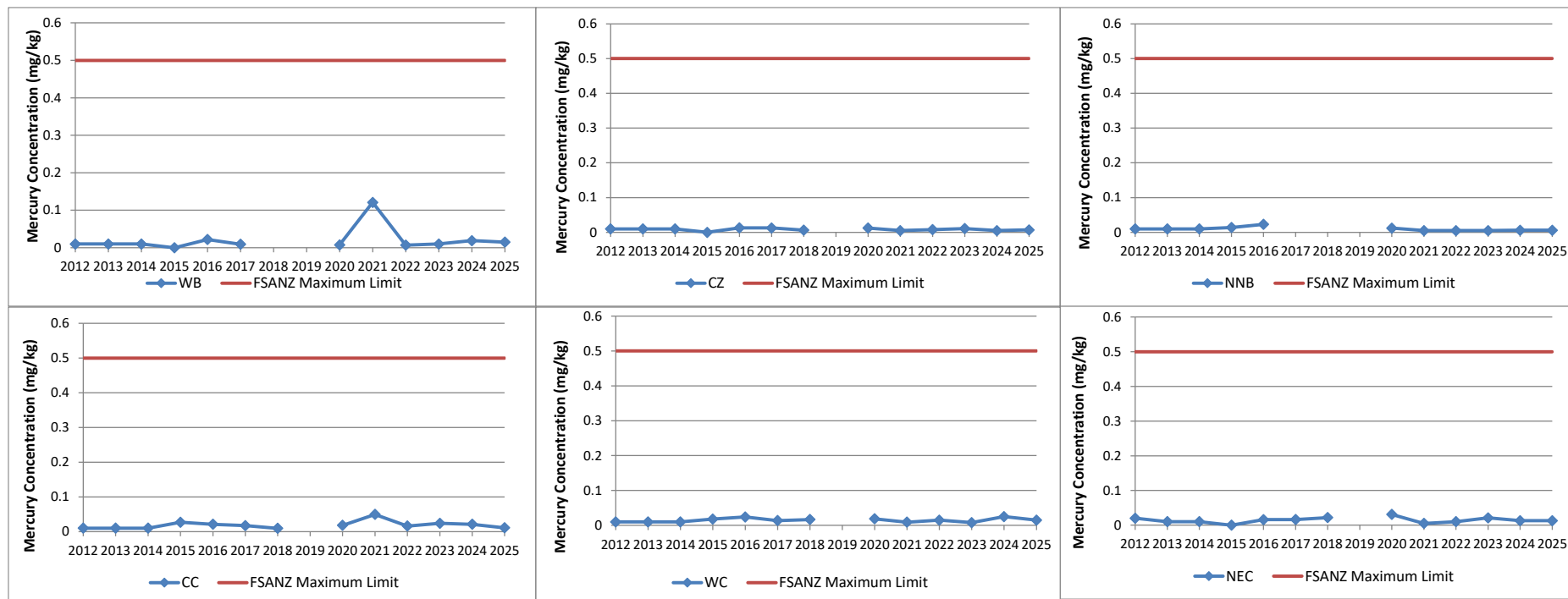




Mercury

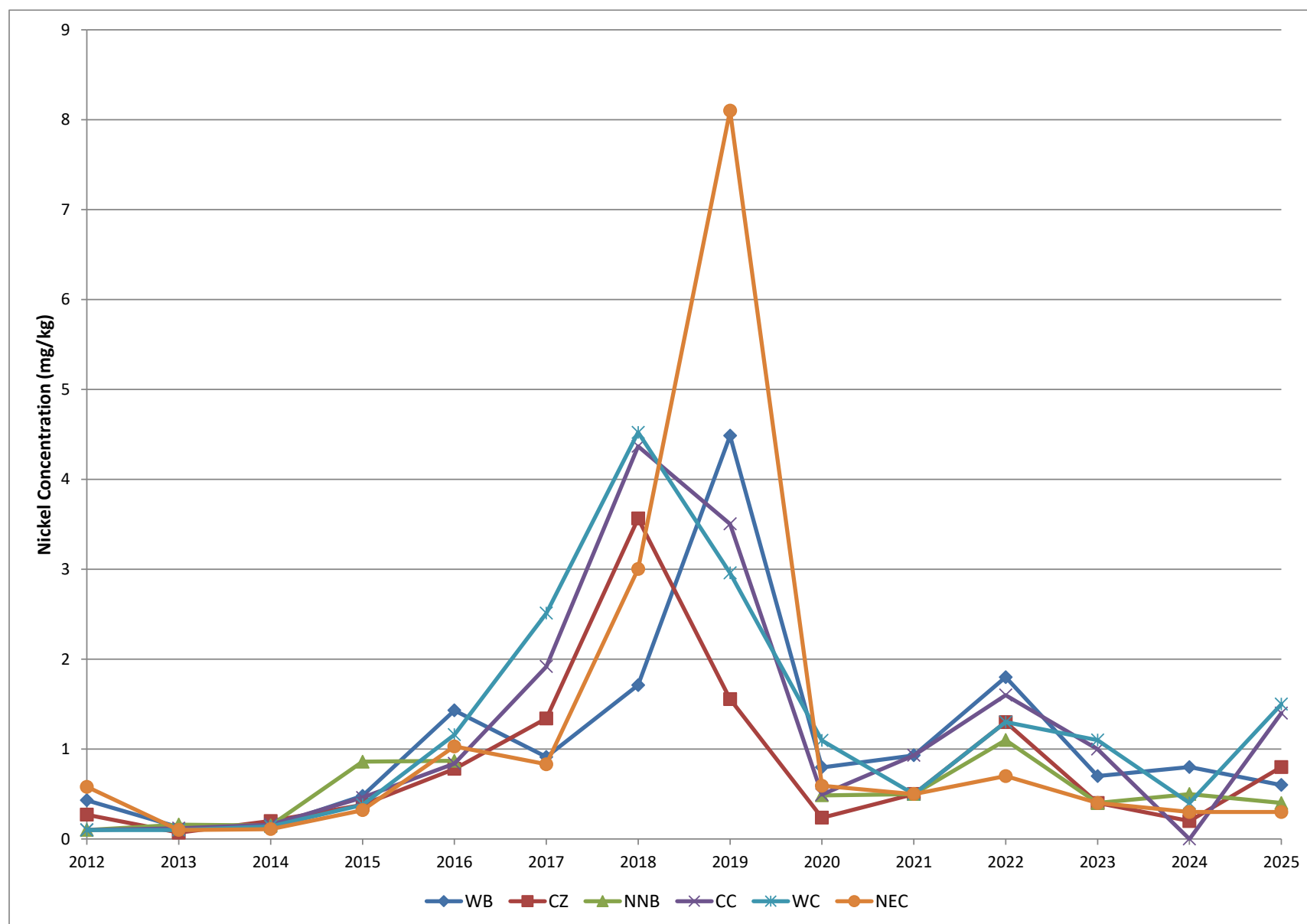
Site	Mercury mg/kg wet weight													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	0.01	0.01	0.01	<0.01	0.022	0.009			0.00771	0.1209	0.007	0.01	0.019	0.015
CZ	0.01	0.01	0.01	<0.01	0.013	0.013	0.00648		0.01245	0.005	0.008	0.011	0.005	0.007
NNB	0.01	0.01	0.01	0.014	0.023				0.01212	0.005	0.005	0.005	0.006	0.006
CC	0.01	0.01	0.01	0.027	0.021	0.017	0.00936		0.0182	0.0496	0.016	0.024	0.021	0.011
WC	0.01	0.01	0.01	0.018	0.024	0.014	0.01666		0.01878	0.0093	0.015	0.008	0.025	0.015
NEC	0.02	0.01	0.01	<0.01	0.016	0.016	0.02184		0.03102	0.005	0.01	0.021	0.013	0.013

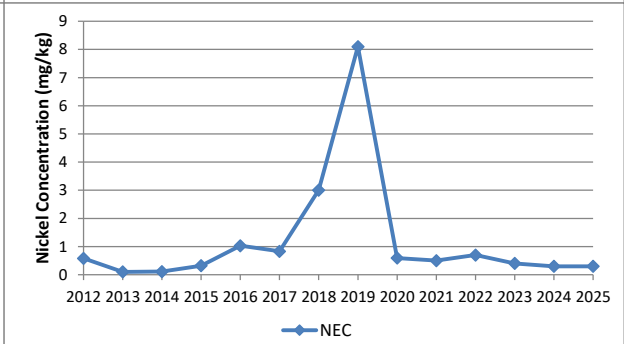
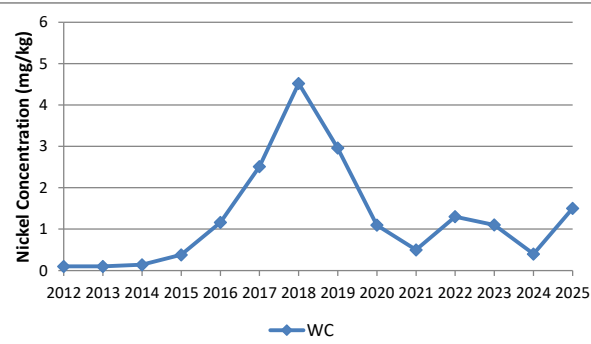
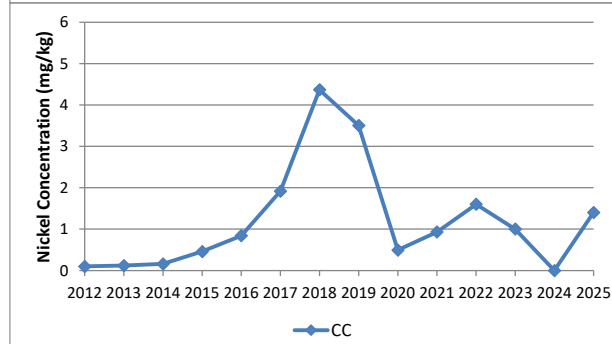
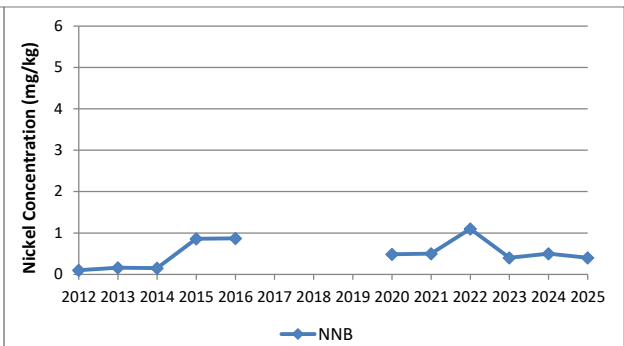
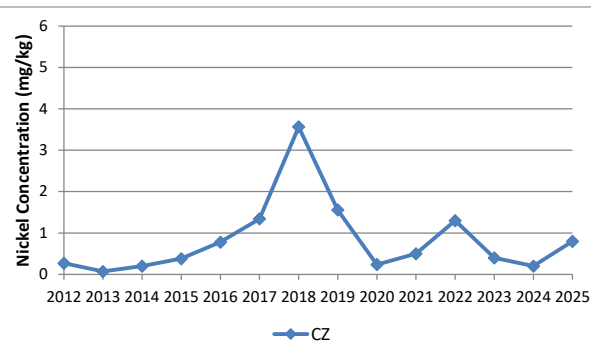
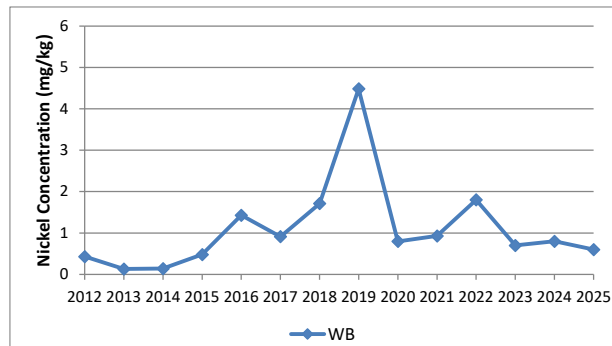




Nickel

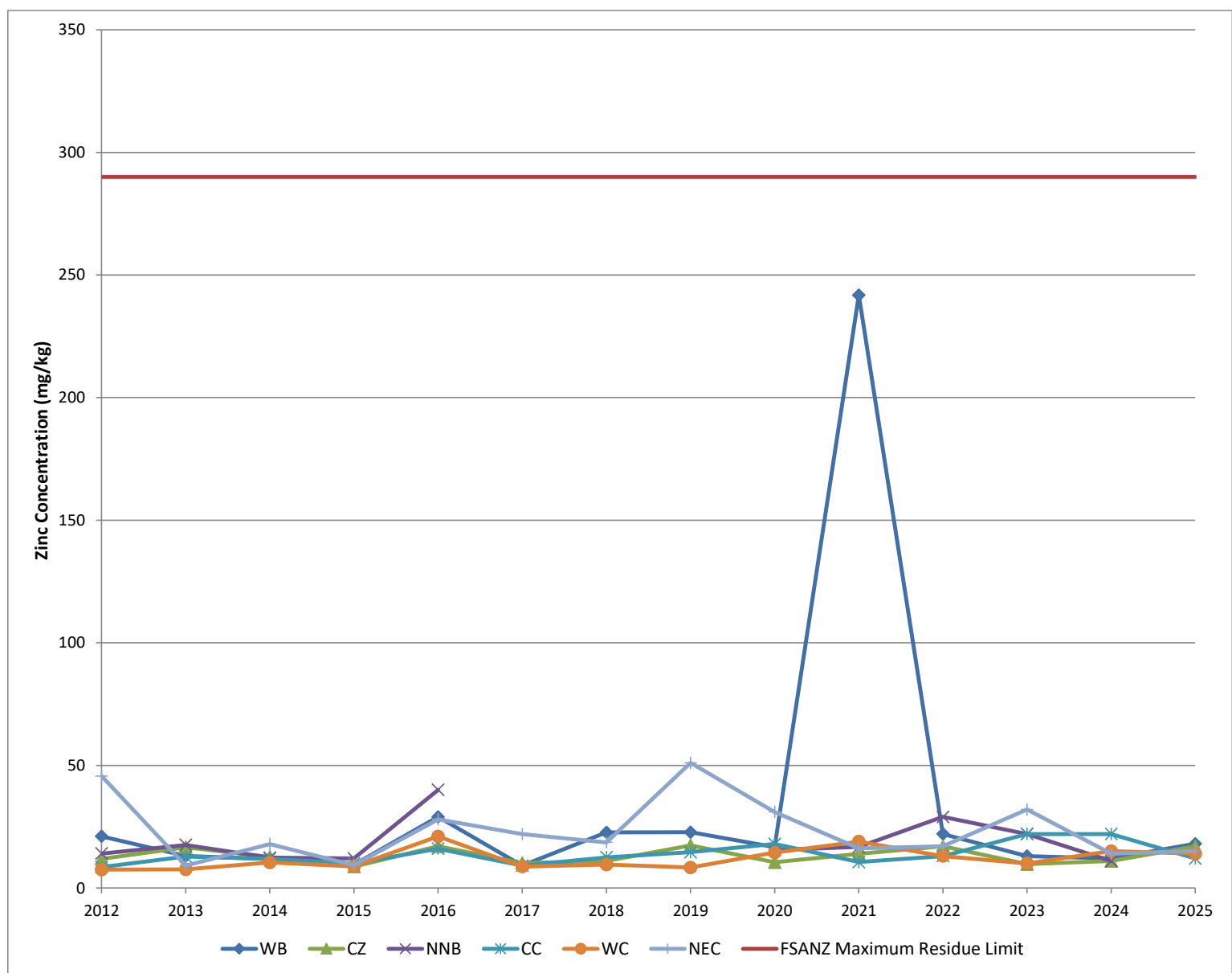
Site	Nickel (mg/kg) wet weight													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	0.43	0.13	0.14	0.48	1.43	0.9126	1.7	4.485	0.797	0.93	1.8	0.7	0.8	0.6
CZ	0.27	0.07	0.2	0.38	0.78	1.3409	3.564	1.5555	0.237	0.5	1.3	0.4	0.2	0.8
NNB	0.1	0.16	0.15	0.86	0.87				0.485	0.5	1.1	0.4	0.5	0.4
CC	0.1	0.12	0.16	0.46	0.84	1.9188	4.368	3.504	0.494	0.93	1.6	1	<0.2	1.4
WC	0.1	0.1	0.14	0.38	1.16	2.5116	4.522	2.959	1.096	0.5	1.3	1.1	0.4	1.5
NEC	0.58	0.1	0.11	0.32	1.03	0.8308	3.003	8.1	0.592	0.5	0.7	0.4	0.3	0.3

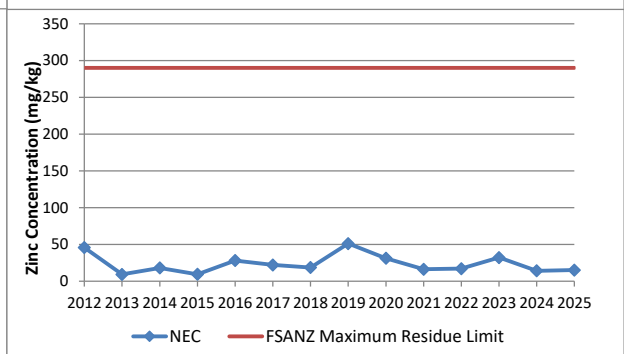
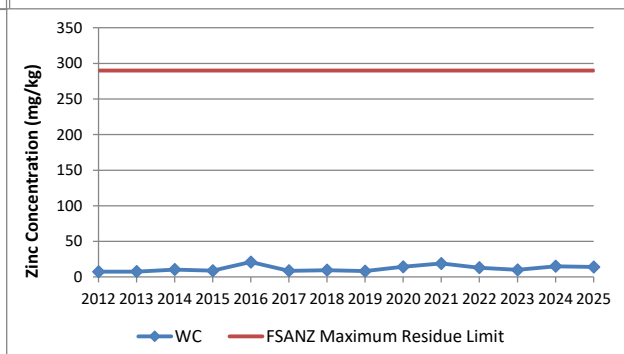
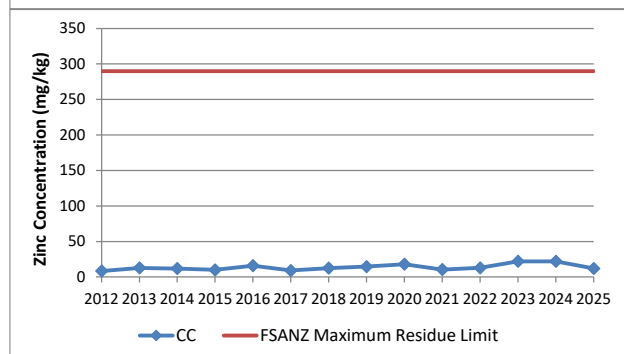
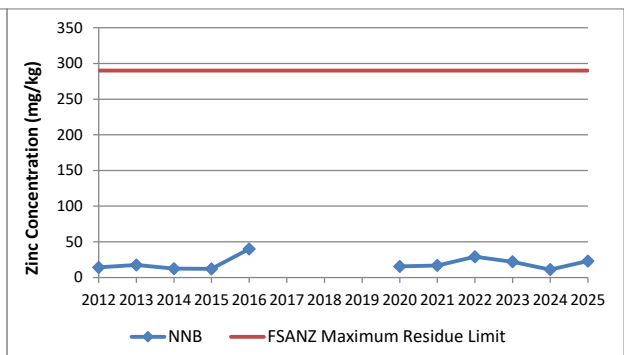
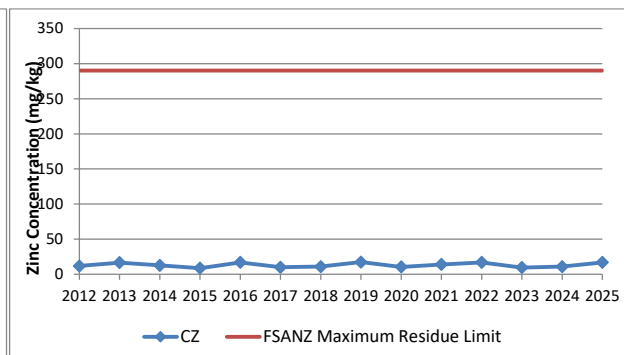
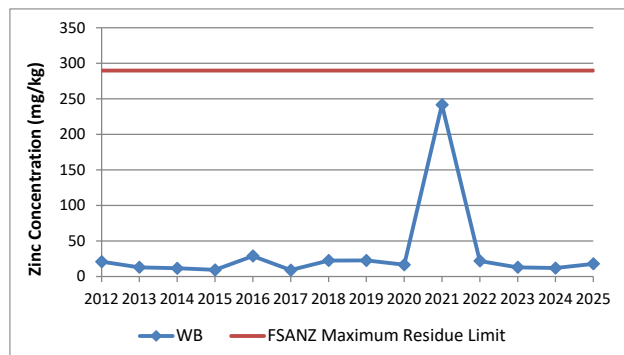




Zinc

Site	Zinc (mg/kg) wet weight													
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	21.06	13.04	11.76	9.5	29	9.126	23	23	16.71	241.8	22	13	12	18
CZ	11.88	16.59	12.68	8.7	17	10.12	11.016	17.385	10.46	13.95	17	9.7	11	17
NNB	14.04	17.56	12.34	12	40				15.45	16.74	29	22	11	23
CC	8.5	12.79	11.88	10	16	9.102	12.48	14.6	17.94	10.54	13	22	22	12
WC	7.48	7.57	10.38	8.8	21	8.736	9.52	8.339	14.4	18.91	13	10	15	14
NEC	45.6	9.14	17.9	9.3	28	21.976	18.564	51	31.02	16.12	17	32	14	15





Hydrocarbons

Hydrocarbons in mudwhehks (mg/kg)															
Site	Component	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WB	TS	<40	<40	<40	<0.1	<0.1									
	PAH	<5	<5	<5	<0.00024	<0.00001	<0.0002	13	<0.01		<0.005	<0.005	<0.01	<0.01	<0.01
	TRH C10-C16						0.17	<0.05	<0.05	<25	NA	NA	NA	NA	NA
	TRH C16-C34						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	TRH C34-C40						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	Total TRHs						<0.200	<0.200	<0.200	<250	<0.04	<0.04	<0.01	<0.01	<0.01
CZ	TS	<40	<40	<40	<0.1	<0.1									
	PAH	<5	<5	<5	<0.00024	<0.00001	<0.0002	9	<0.01		<0.005	<0.005	<0.01	<0.01	<0.01
	TRH C10-C16						0.15	<0.05	<0.05	<25	NA	NA	NA	NA	NA
	TRH C16-C34						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	TRH C34-C40						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	Total TRHs						<0.200	<0.200	<0.200	<250	<0.04	<0.04	<0.01	<0.01	<0.01
NNB	TS	<40	<40	<40	<0.1	<0.1									
	PAH	<5	<5	<5	<0.00024	<0.00001	NA	NA	NA		<0.005	<0.005	<0.01	<0.01	<0.01
	TRH C10-C16						NA	NA	NA	<25	NA	NA	NA	NA	NA
	TRH C16-C34						NA	NA	NA	<100	NA	NA	NA	NA	NA
	TRH C34-C40						NA	NA	NA	<100	NA	NA	NA	NA	NA
	Total TRHs						NA	NA	NA	<250	<0.04	<0.04	<0.01	<0.01	<0.01
CC	TS	<40	<40	<40	<0.1	<0.1									
	PAH	<5	<5	<5	<0.00024	<0.00001	<0.0002	9	<0.01		<0.005	<0.005	<0.01	<0.01	<0.01
	TRH C10-C16						<0.05	<0.05	<0.05	<25	NA	NA	NA	NA	NA
	TRH C16-C34						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	TRH C34-C40						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	Total TRHs						<0.200	<0.200	<0.200		<0.04	<0.04	<0.01	<0.01	<0.01
	Oil & Grease														
WC	TS	<40	<40	<40	<0.1	<0.1									
	PAH	<5	<5	<5	<0.00024	<0.00001	<0.0002	22	<0.01		<0.005	<0.005	<0.01	<0.01	<0.01
	TRH C10-C16						<0.05	<0.05	<0.05	<25	NA	NA	NA	NA	NA
	TRH C16-C34						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	TRH C34-C40						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	Total TRHs						<0.200	<0.200	<0.200		<0.04	<0.04	<0.01	<0.01	<0.01
NEC	TS	<40	<40	<40	<0.1	<0.1									
	PAH	<5	<5	<5	<0.00024	<0.00001	<0.0002	16	<0.01		<0.005	<0.005	<0.01	<0.01	<0.01
	TRH C10-C16						<0.05	<0.05	<0.05	<25	NA	NA	NA	NA	NA
	TRH C16-C34						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	TRH C34-C40						<0.100	<0.100	<0.100	<100	NA	NA	NA	NA	NA
	Total TRHs						<0.200	<0.200	<0.200	<250	<0.04	<0.04	<0.01	<0.01	<0.01

Shell Length

Site	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CC	79	81	100	84	86	87	75	83	84	98
CZ	109	97	106	113	102	93	109	107	86	107
WC	95	95	91	83	85	81	86	59	77	84
NEC	122	104	100	103	101	91	100	98	120	115
WB	105	98	105	100	107	91	106	105	87	113
NNB	96	-	-	-	85.25	91	100	101	86	111
Mean	101.00	95.00	99.97	96.66	94.38	88.97	95.95	92.19	90.07	104.81



Appendix F. Mangrove health data

APPENDIX F-MANGROVE HEALTH DATA

Location	Mangrove Assemblage	Plots	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
North East Creek	Avicennia	A1-A3	81	1	76	10	76	12	70	9	73	15	71	13	66	13	67	9	65	9	68	10	72	5
	Avicennia regrowth	A4-A6	53	1	56	4	65	4	65	3	69	3	77	6	69	5	68	7	70	7	73	7	73	6
	Rhizophora	R1-R3	87	4	88	1	85	3	88	4	93	0	95	3	93	1	92	1	94	1	94	1	94	1
No Name Bay	Avicennia	A1-A3	68	6	70	9	69	9	74	5	81	1	84	4	85	4	84	4	85	4	89	3	88	6
	Rhizophora/Avicennia	R1-R3	66	9	65	3	65	5	67	6	77	4	83	4	82	1	82	5	84	3	92	4	86	4
Conzinc Bay (Reference)	Avicennia	A1-A3	78	11	78	9	78	12	80	4	78	4	80	4	75	5	74	5	72	3	75	3	85	4
	Rhizophora	R1-R3	88	10	94	6	88	3	93	4	93	3	94	1	93	7	93	4	93	1	96	1	93	3
Withnell Bay (Reference)	Avicennia	A1-A3	78	9	79	4	78	5	74	4	75	5	71	6	75	5	78	6	75	2	76	6	74	8
	Rhizophora	R1-R3	90	4	93	3	92	4	93	3	93	2	94	2	95	3	96	1	95	3	94	1	94	1
Hearson Cove (reference)	Avicennia	A1-A3	70	7	67	4	68	9	67	1	65	4	63	4	62	1	63	1	59	1	68	3	68	6
Watering Cove (Reference)	Avicennia	A1-A3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Rhizophora	R1-R3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
King Bay (reference)	Avicennia	A1-A3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Rhizophora	R1-R3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location	Mangrove Assemblage	Plots	2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
North East Creek	Avicennia	A1-A3	74	6	75	7	76	8	78	10	73	17	68	14	58	26	64	21	59	21	48	20	NA	NA
	Avicennia regrowth	A4-A6	78	5	78	3	79	4	78	7	83	11	83	8	77	18	77	1	67	3	72	6	49	20
	Rhizophora	R1-R3	93	3	92	1	92	3	91	1	94	1	92	3	95	1	90	0	89	1	92	0	68	18
No Name Bay	Avicennia	A1-A3	89	5	88	1	89	1	95	0	94	1	90	5	90	3	88	0	89	2	88	3	63	18
	Rhizophora/Avicennia	R1-R3	86	4	88	4	87	6	94	1	93	3	90	5	91	3	88	2	89	2	89	1	63	2
Conzinc Bay (Reference)	Avicennia	A1-A3	74	3	73	1	78	4	75	4	76	3	73	7	71	5	73	6	71	8	67	10	23	18
	Rhizophora	R1-R3	93	3	91	1	92	3	93	3	93	0	90	5	93	1	90	0	91	0	88	2	29	20
Withnell Bay (Reference)	Avicennia	A1-A3	75	7	78	6	74	3	80	5	76	6	73	4	77	1	77	4	78	4	78	4	44	21
	Rhizophora	R1-R3	94	1	93	3	92	6	92	3	91	1	90	0	91	2	90	1	91	1	91	1	76	5
Hearson Cove (reference)	Avicennia	A1-A3	71	4	70	4	73	5	69	4	60	9	69	7	59	0	63	9	57	9	59	6	22	10
Watering Cove (Reference)	Avicennia	A1-A3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76	8	16	10
	Rhizophora	R1-R3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	89	3	62	3
King Bay (reference)	Avicennia	A1-A3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Rhizophora	R1-R3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location	Mangrove Assemblage	Plots	2016		2017		2018		2019		2020		2021		2022		2023		2024		2025	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
North East Creek	Avicennia	A1-A3	37	9	30	10	34	6	31	5	22	20	17	32	37	5	41	4	43	2	43	4
	Avicennia regrowth	A4-A6	50	16	53	7	55	3	58	11	32	23	21	29	43	9	45	6	46	13	56	12
	Rhizophora	R1-R3	68	3	84	5	85	2	85	3	83	11	82	7	78	2	86	2	91	1	73	7
No Name Bay	Avicennia	A1-A3	82	3	81	2	79	4	87	1	61	22	59	5	56	11	77	4	73	8	85	2
	Rhizophora/Avicennia	R1-R3	80	5	80	2	84	1	87	2	60	24	59	5	46	13	69	6	65	11	65	11
Conzinc Bay (Reference)	Avicennia	A1-A3	52	14	50	16	48	12	59	16	39	20	37	28	49	10	39	21	46	7	60	10
	Rhizophora	R1-R3	79	4	83	9	81	16	75	13	70	19	74	21	72	8	78	12	86	14	90	6
Withnell Bay (Reference)	Avicennia	A1-A3	86	6	68	12	65	9	73	13	58	20	42	20	41	5	88	1	75	6	70	13
	Rhizophora	R1-R3	69	12	85	4	86	3	92	0	83	6	81	3	78	10	61	10	90	2	94	0
Hearson Cove (reference)	Avicennia	A1-A3	38	7	17	5	36	7	37	17	27	24	20	34	14	7	32	14	62	8	42	10
Watering Cove (Reference)	Avicennia	A1-A3	48	2	38	3	50	11	44	8	48	29	35	35	52	8	55	8	59	12	62	13
	Rhizophora	R1-R3	74	8	79	8	84	1	81	8	74	15	63	18	69	10	79	6	90	1	93	1
King Bay (reference)	Avicennia	A1-A3	NA	NA	65	3	62	5	70	1	56	17	57	8	57	5	78	3	75	3	79	2
	Rhizophora	R1-R3	NA	NA	80	3	88	1	91	1	80	13	77	3	80	1	87	2	93	1	95	1

APPENDIX F-MANGROVE HEALTH DATA

Parameter	Running MVI	Site	Parameter	2016			2017			2018			2019			2020			2021			2022			2023			2024			2025		
				Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey	Total Area	West Survey	East Survey
Area (ha)	0.15	CC	Area (ha)	5.79	0.18	0.21										5.786	1.81	2.21															
Max NVDI			Max NVDI	0.54	0.45	0.44										0.54	0.45	0.44															
Mean NVDI			Mean NVDI	0.15	0.20	0.16										0.15	0.2	0.16															
Std Dev NVDI			Std Dev NVDI	0.09	0.07	0.08										0.09	0.07	0.08															
Area (ha)	0.46	KB	Area (ha)				20.33	0.28	0.25	20.06	0.29	0.25	17.71	0.29	0.25	20.91	0.30	0.25	20.91	0.30	0.25	19.86	0.29	0.26	20.44	0.26	0.26	20.44	0.30	0.26	19.72	0.26	0.31
Max NVDI			Max NVDI				0.98	0.98	0.93	0.78	0.78	0.78	1.00	0.93	0.83	0.96	0.94	0.92	0.984	0.979	0.976	0.989	0.984	0.977	0.89	0.82	0.85						
Mean NVDI			Mean NVDI				0.35	0.53	0.40	0.38	0.53	0.34	0.42	0.58	0.48	0.61	0.79	0.72	0.551	0.657	0.643	0.589	0.794	0.665	0.48	0.58	0.63	0.55	0.76	0.67	0.74	0.79	0.87
Std Dev NVDI			Std Dev NVDI				0.17	0.10	0.09	0.17	0.10	0.09	0.27	0.19	0.13	0.24	0.13	0.08	0.244	0.233	0.192	0.257	0.125	0.142	0.21	0.10	0.12	0.27	0.21	0.11	0.16	0.07	0.08
Area (ha)	0.43	CZ	Area (ha)	6.49	0.17	0.16	6.33	0.15	0.14	6.57	0.14	0.14	5.82	0.14	0.14	6.63	0.15	0.14	6.63	0.15	0.14	6.48	0.14	0.14	5.83	0.13	0.14	5.83	0.14	0.13	4.81	0.13	0.12
Max			Max	0.79	0.61	0.57	0.87	0.86	0.66	0.79	0.77	0.65	0.96	0.96	0.83	0.98	0.96	0.93	0.972	0.943	0.961	0.978	0.962	0.968	0.94	0.92	0.86						
Mean			Mean	0.29	0.34	0.30	0.37	0.47	0.40	0.36	0.50	0.42	0.41	0.56	0.50	0.63	0.76	0.73	0.491	0.520	0.624	0.479	0.556	0.614	0.49	0.62	0.52	0.53	0.60	0.65	0.64	0.72	0.65
Std Dev			Std Dev	0.11	0.10	0.08	0.17	0.15	0.13	0.17	0.13	0.13	0.27	0.25	0.19	0.25	0.18	0.15	0.246	0.208	0.197	0.265	0.224	0.221	0.24	0.18	0.19	0.27	0.19	0.27	0.16	0.12	0.13
Area (ha)	0.33	HC	Area (ha)	1.16	0.13	0.10	0.99	0.06	0.04	1.27	0.07	0.06	1.24	0.09	0.08	1.43	0.10	0.09	1.63	0.10	0.09	1.55	0.08	0.10	1.37	0.07	0.06	1.37	0.06	0.07	1.47	0.10	0.09
Max			Max	0.48	0.46	0.47	0.99	0.98	0.82	0.74	0.74	0.71	0.86	0.80	0.80	0.84	0.83	0.81	0.960	0.943	0.948	0.968	0.940	0.953	0.85	0.84	0.82						
Mean			Mean	0.19	0.20	0.20	0.33	0.39	0.37	0.33	0.41	0.43	0.24	0.28	0.27	0.40	0.43	0.45	0.467	0.554	0.577	0.391	0.429	0.432	0.41	0.51	0.50	0.45	0.51	0.48	0.64	0.70	0.70
Std Dev			Std Dev	0.09	0.09	0.09	0.15	0.14	0.13	0.19	0.19	0.18	0.22	0.24	0.23	0.22	0.22	0.20	0.238	0.182	0.179	0.260	0.244	0.265	0.24	0.22	0.21	0.24	0.19	0.23	0.18	0.16	0.12
Area (ha)	0.41	NEC	Area (ha)	7.46	0.27	0.37	8.11	0.19	0.31	9.26	0.19	0.31	8.37	0.18	0.30	9.07	0.19	0.31	9.07	0.19	0.31	7.59	0.19	0.29	8.64	0.23	0.32	8.64	0.23	0.32	6.55	0.08	0.23
Max			Max	0.56	0.54	0.56	0.93	0.71	0.69	0.97	0.63	0.66	1.15	0.94	0.91	0.95	0.88	0.89	0.982	0.964	0.951	0.979	0.935	0.941	0.97	0.92	0.90						
Mean			Mean	0.30	0.35	0.36	0.37	0.32	0.32	0.33	0.27	0.29	0.41	0.27	0.39	0.52	0.32	0.52	0.535	0.702	0.581	0.476	0.255	0.420	0.45	0.22	0.40	0.42	0.21	0.39	0.61	0.51	0.57
Std Dev			Std Dev	0.09	0.05	0.05	0.17	0.12	0.14	0.21	0.11	0.14	0.28	0.25	0.24	0.25	0.24	0.22	0.222	0.126	0.153	0.272	0.249	0.245	0.26	0.22	0.23	0.30	0.23	0.24	0.16	0.18	0.14
Area (ha)	0.44	NNB	Area (ha)	1.50	0.20	0.18	1.51	0.17	0.15	1.52	0.17	0.15	1.51	0.18	0.16	1.56	0.18	0.16	1.56	0.18	0.16	1.48	0.15	0.17	1.52	0.18	0.15	1.52	0.18	0.15	1.42	0.18	0.15
Max			Max	0.56	0.54	0.56	0.80	0.77	0.69	0.80	0.74	0.73	1.00	0.95	0.95	0.89	0.86	0.86	0.979	0.934	0.944	0.986	0.986	0.985	0.91	0.87	0.88						
Mean			Mean	0.30	0.35	0.36	0.39	0.49	0.50	0.41	0.50	0.52	0.50	0.65	0.69	0.55	0.69	0.66	0.469	0.447	0.549	0.603	0.728	0.698	0.46	0.59	0.63	0.52	0.71	0.66	0.71	0.82	0.79
Std Dev			Std Dev	0.09	0.05	0.05	0.16	0.10	0.07	0.16	0.08	0.06	0.26	0.15	0.08	0.23	0.11	0.12	0.266	0.230	0.239	0.229	0.138	0.159	0.22	0.14	0.14	0.25	0.10	0.15	0.15	0.06	0.08
Area (ha)	0.39	WB	Area (ha)	3.99	0.19	0.16	4.71	0.17	0.14	4.70	0.17	0.14	3.96	0.17	0.13	4.81	0.17	0.14	4.81	0.17	0.14	4.61	0.17	0.14	4.75	0.17	0.14	4.75	0.14	0.17	3.62	0.16	0.13
Max			Max	0.62	0.59	0.53	0.80	0.77	0.63	0.75	0.75	0.71	1.00	1.00	0.93	0.95	0.93	0.88	0.965	0.938	0.948	0.971	0.965	0.971	0.95	0.94	0.90						
Mean			Mean	0.25	0.32	0.27	0.35	0.49	0.35	0.34	0.51	0.40	0.39	0.66	0.43	0.57	0.74	0.59	0.451	0.447	0.549	0.480	0.499	0.676	0.51	0.72	0.51	0.48	0.51	0.72	0.64	0.74	0.63
Std Dev			Std Dev	0.10	0.08	0.08	0.17	0.12	0.15	0.15	0.09	0.12	0.28	0.15	0.24	0.24	0.10	0.20	0.222	0.175	0.175	0.259	0.245	0.154	0.24	0.13	0.22	0.27	0.23	0.14	0.14	0.09	0.14
Area (ha)	0.40	WC	Area (ha)	13.39	0.26	0.23	10.87	0.18	0.14	12.54	0.20	0.18	12.23	0.20	0.19	14.87	0.23	0.20	14.87	0.23	0.20	14.39	0.20	0.23	13.93	0.23	0.18	13.93	0.18	0.23	11.10	0.20	0.18
Max			Max	0.60	0.55	0.57	0.98	0.98	0.98	0.99	0.67	0.69	1.10	1.07	1.10	0.92	0.90	0.91	0.978	0.949	0.973	0.983	0.981	0.979	0.95	0.94	0.93						
Mean			Mean	0.24	0.25	0.28	0.37	0.42	0.51	0.28	0.30	0.39	0.47	0.48	0.70	0.55	0.64	0.68	0.487	0.486	0.670	0.556	0.672	0.667	0.50	0.57	0.63	0.51	0.63	0.60	0.66	0.69	0.74
Std Dev			Std Dev	0.09	0.10	0.09	0.17	0.17	0.15	0.19	0.13	0.12	0.30	0.25	0.18	0.21	0.15	0.16	0.252	0.234	0.186	0.241	0.214	0.184	0.21	0.18	0.17	0.25	0.22	0.19	0.14	0.12	0.15

Appendix G. Laboratory reports



CERTIFICATE OF ANALYSIS

Work Order : EP2518235
Amendment : 1
Client : WA MARINE PTY LTD
Contact : Sam Billinghamurst
Address : SUITE 5, 5/18 GRIFFON DRIVE PO BOX 1370
DUNSBOROUGH, PERTH WA, AUSTRALIA 6281
Telephone : 0433 283 013
Project : 25ENV445
Order number : ----
C-O-C number : ----
Sampler : Eve Challander, Sam Billinghamurst
Site : ChEMMS
Quote number : EP23O2MARI0007_V5
No. of samples received : 70
No. of samples analysed : 70

Page : 1 of 89
Laboratory : Environmental Division Perth
Contact : Madison Forster
Address : 26 Rigali Way Wangara WA Australia 6065
Telephone : +61-8-9406 1301
Date Samples Received : 30-Oct-2025 16:30
Date Analysis Commenced : 04-Nov-2025
Issue Date : 24-Nov-2025 18:21



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Beatriz Llarinas	Senior Chemist	Brisbane Inorganics, Stafford, QLD
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Chris Lemaitre	Perth - State Manager	Perth Inorganics, Wangara, WA
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, WA
Efua Wilson	Metals Chemist	Perth Inorganics, Wangara, WA
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
John Horwood	Organic Supervisor	Perth Organics, Wangara, WA
Niamh Carthew	Inorganic Chemist	Perth Inorganics, Wangara, WA
Satishkumar Trivedi	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD

right solutions. right partner.



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
Ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP262: ALS is not NATA-accredited for Ethanolamines in soil.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP080-SD: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: Metals LOR for samples EP2518235 -058 to -062, -065 to -069 raised due to high TDS content.
- EP075(SIM): Poor surrogate recoveries for particular samples due to suspected matrix effects and non-target peak interferences. Confirmed by re-extraction and re-analysis.
- EP075(SIM): Poor matrix spike recovery for 2-Nitrophenol for QC sample due to suspected matrix effects and interferences.
- EP231X: LOR values have been raised for particular analytes on sample "EP2518235-055" due to high moisture content in sample.
- EP075(SIM): LOR raised for particular analytes in sample EP2518235-055 due high moisture content.
- EG035: Positive mercury on samples EP2518235-038, -041, -045 to -047, -051, -055 and -056 has been confirmed by re-preparation and re-analysis.
- EG005: Be LOR for sample EP2518235- 055 raised due to high moisture content.
- EP132B-SD: LOR has been raised for particular samples due to matrix affects and non-target peak integration. Confirmed by re-extraction and re-analysis.
- EG005: Mn result for samples EP2518235-041 and -043 and Zn result for samples EP2518235-055 and -056 were confirmed by re-extraction and re-analysis.
- EP071-SD: Poor duplicate precision for QC sample EP2518235-039 due to suspected matrix effects and sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EP132-SD: Poor duplicate precision due to sample heterogeneity.



- EP262: ALS is not NATA accredited for the analysis of MDEA.
- Amendment (20/11/2025): This report has been amended and re-released to allow the reporting of additional analytical data, specifically method EG035F-LL Mercury for samples ALS 058, 059, 060, 061, 062, 063, 064, 065, 066, 067, 068, 069 & 070, EG094F: Barium & Vanadium for samples ALS 063, 064 & 070, EG093F: Barium & Vanadium for samples ALS 058, 059, 060, 061, 062, 065, 066, 067, 068 & 069 .
- EG035E (1M HCl Extractable Mercury by FIMS): Samples WB (EP2518235-026) and NEC5b (EP2518235-046) show poor matrix spike recovery due to matrix interference. Confirmed by re-extraction and re-analysis.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- EG093: Samples containing high levels of sulfate may precipitate barium under the acidic conditions of this method and may therefore bias results low.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				SW01	SW02	SW03	SW04	SW05
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062
				Result	Result	Result	Result	Result
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO ₃	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO ₃	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO ₃	71-52-3	1	mg/L	113	114	116	121	123
Total Alkalinity as CaCO ₃	----	1	mg/L	113	114	116	121	123
ED041G: Sulfate (Turbidimetric) as SO₄ 2- by DA								
Sulfate as SO ₄ - Turbidimetric	14808-79-8	1	mg/L	3010	2950	3060	2920	2940
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	21300	21300	21100	21000	21800
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	513	496	497	515	512
Magnesium	7439-95-4	1	mg/L	1350	1320	1320	1310	1350
Sodium	7440-23-5	1	mg/L	11600	11400	11400	11400	11600
Potassium	7440-09-7	1	mg/L	411	406	407	408	418
EG020F: Dissolved Metals by ICP-MS								
Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.00004	mg/L	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004
EG049G LL-F: Dissolved Trivalent Chromium - Low Level								
Trivalent Chromium	16065-83-1	0.001	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level								
Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Antimony	7440-36-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Arsenic	7440-38-2	0.5	µg/L	1.5	1.5	1.6	1.5	1.4
Barium	7440-39-3	1	µg/L	7	7	7	7	9
Beryllium	7440-41-7	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Boron	7440-42-8	100	µg/L	4730	4650	4730	4700	4720



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW01	SW02	SW03	SW04	SW05
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062	
				Result	Result	Result	Result	Result	
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued									
Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	<1	
Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	
Manganese	7439-96-5	0.5	µg/L	9.6	9.2	13.4	19.3	56.5	
Molybdenum	7439-98-7	0.1	µg/L	10.3	10.4	10.9	10.7	10.5	
Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Selenium	7782-49-2	2	µg/L	<2	<2	<2	<2	<2	
Silver	7440-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Tin	7440-31-5	5	µg/L	<5	<5	<5	<5	<5	
Vanadium	7440-62-2	0.5	µg/L	1.4	1.4	1.3	1.3	0.9	
Zinc	7440-66-6	5	µg/L	<5	<5	<5	<5	<5	
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L	666	665	661	656	679	
ø Total Cations	----	0.01	meq/L	652	640	640	640	652	
ø Ionic Balance	----	0.01	%	1.06	1.91	1.65	1.22	2.01	
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup									
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup									
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

				Sample ID	SW01	SW02	SW03	SW04	SW05
Sampling date / time					29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit		EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062
					Result	Result	Result	Result	Result
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup - Continued									
>C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2,6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW01	SW02	SW03	SW04	SW05
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

				Sample ID	SW01	SW02	SW03	SW04	SW05
Sampling date / time					29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit		EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

				Sample ID	SW01	SW02	SW03	SW04	SW05
Sampling date / time					29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit		EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

				Sample ID	SW01	SW02	SW03	SW04	SW05
Sampling date / time					29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit		EP2518235-058	EP2518235-059	EP2518235-060	EP2518235-061	EP2518235-062
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		11.6	10.8	17.3	10.6	14.5
2-Chlorophenol-D4	93951-73-6	1.0	%		34.7	48.1	36.3	21.5	30.3
2,4,6-Tribromophenol	118-79-6	1.0	%		21.9	20.2	34.8	23.0	26.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		38.0	54.9	39.8	21.0	44.6
Anthracene-d10	1719-06-8	1.0	%		52.9	72.5	48.3	44.8	45.6
4-Terphenyl-d14	1718-51-0	1.0	%		54.0	59.4	84.4	57.5	75.7
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		95.5	100	98.8	104	106
Toluene-D8	2037-26-5	2	%		96.5	93.6	97.9	88.7	101
4-Bromofluorobenzene	460-00-4	2	%		114	117	91.9	91.7	93.8
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		92.4	92.5	99.5	95.6	94.0
13C8-PFOA	----	0.02	%		102	98.5	98.8	101	99.2



Analytical Results

Sub-Matrix: MARINE WATER
(Matrix: WATER)

Sample ID

				SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067
				Result	Result	Result	Result	Result
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO ₃	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO ₃	3812-32-6	1	mg/L	<1	5	<1	<1	<1
Bicarbonate Alkalinity as CaCO ₃	71-52-3	1	mg/L	284	279	186	110	158
Total Alkalinity as CaCO ₃	----	1	mg/L	284	284	186	110	158
ED041G: Sulfate (Turbidimetric) as SO₄ 2- by DA								
Sulfate as SO ₄ - Turbidimetric	14808-79-8	1	mg/L	164	173	2040	2860	2680
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	450	467	15700	21200	20200
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	50	52	375	490	485
Magnesium	7439-95-4	1	mg/L	46	47	937	1300	1220
Sodium	7440-23-5	1	mg/L	326	340	8080	11200	10600
Potassium	7440-09-7	1	mg/L	32	32	295	400	386
EG020F: Dissolved Metals by ICP-MS								
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.005	<0.005	<0.005
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.00004	mg/L	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004
EG049G LL-F: Dissolved Trivalent Chromium - Low Level								
Trivalent Chromium	16065-83-1	0.001	mg/L	<0.001	<0.001	<0.005	<0.005	<0.005
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level								
Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Antimony	7440-36-0	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Arsenic	7440-38-2	0.5	µg/L	----	----	2.1	1.6	4.5
Barium	7440-39-3	1	µg/L	----	----	22	6	15
Beryllium	7440-41-7	0.1	µg/L	----	----	<0.1	<0.1	<0.1
Boron	7440-42-8	100	µg/L	----	----	3550	4560	4500



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067
				Result	Result	Result	Result	Result

EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued

Cadmium	7440-43-9	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L	----	----	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L	----	----	<1	<1	<1
Lead	7439-92-1	0.2	µg/L	----	----	<0.2	<0.2	<0.2
Manganese	7439-96-5	0.5	µg/L	----	----	9.9	0.7	7.8
Molybdenum	7439-98-7	0.1	µg/L	----	----	9.6	10.5	9.7
Nickel	7440-02-0	0.5	µg/L	----	----	0.6	1.1	<0.5
Selenium	7782-49-2	2	µg/L	----	----	<2	<2	<2
Silver	7440-22-4	0.1	µg/L	----	----	<0.1	<0.1	<0.1
Tin	7440-31-5	5	µg/L	----	----	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L	----	----	1.8	1.4	0.6
Zinc	7440-66-6	5	µg/L	----	----	<5	<5	<5

EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS

Antimony	7440-36-0	0.2	µg/L	<0.2	<0.2	----	----	----
Selenium	7782-49-2	0.2	µg/L	0.3	0.3	----	----	----
Arsenic	7440-38-2	0.2	µg/L	2.1	1.9	----	----	----
Barium	7440-39-3	0.5	µg/L	42.2	39.3	----	----	----
Beryllium	7440-41-7	0.1	µg/L	<0.1	<0.1	----	----	----
Boron	7440-42-8	5	µg/L	717	716	----	----	----
Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	----	----	----
Chromium	7440-47-3	0.2	µg/L	0.3	0.4	----	----	----
Cobalt	7440-48-4	0.1	µg/L	<0.1	<0.1	----	----	----
Copper	7440-50-8	0.5	µg/L	<0.5	<0.5	----	----	----
Lead	7439-92-1	0.1	µg/L	<0.1	<0.1	----	----	----
Manganese	7439-96-5	0.5	µg/L	22.4	19.3	----	----	----
Molybdenum	7439-98-7	0.1	µg/L	8.3	8.5	----	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067	
				Result	Result	Result	Result	Result	
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS - Continued									
Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	----	----	----	
Silver	7440-22-4	0.1	µg/L	<0.1	<0.1	----	----	----	
Tin	7440-31-5	0.2	µg/L	<0.2	<0.2	----	----	----	
Vanadium	7440-62-2	0.2	µg/L	0.7	1.3	----	----	----	
Zinc	7440-66-6	1	µg/L	6	8	----	----	----	
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L	21.8	22.4	489	660	629	
ø Total Cations	----	0.01	meq/L	21.3	22.1	455	629	596	
ø Ionic Balance	----	0.01	%	1.17	0.85	3.63	2.40	2.71	
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup									
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup									
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
>C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067	
				Result	Result	Result	Result	Result	
EP075(SIM)A: Phenolic Compounds - Continued									
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1,2,3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067	
				Result	Result	Result	Result	Result	
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW10	SW11	SW12	SW13	NNB
Sampling date / time					28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067	
				Result	Result	Result	Result	Result	
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.01	0.01	<0.01	<0.01	<0.01	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.03	0.02	<0.01	<0.01	<0.01	
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.06	0.07	<0.02	<0.02	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.08	0.08	<0.02	<0.02	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.13	0.13	0.02	<0.02	<0.02	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.07	0.07	<0.01	<0.01	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.03	0.03	<0.02	<0.02	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067	
				Result	Result	Result	Result	Result	
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L	0.41	0.41	0.02	<0.01	<0.01	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.04	0.03	<0.01	<0.01	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.38	0.38	0.02	<0.01	<0.01	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%	12.1	14.5	11.2	14.8	14.1	
2-Chlorophenol-D4	93951-73-6	1.0	%	30.4	33.0	35.0	32.5	31.3	
2,4,6-Tribromophenol	118-79-6	1.0	%	33.9	20.5	22.7	24.6	20.8	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%	35.0	37.4	40.3	37.4	36.8	
Anthracene-d10	1719-06-8	1.0	%	43.4	43.6	53.6	46.6	49.4	
4-Terphenyl-d14	1718-51-0	1.0	%	62.8	60.2	61.7	62.4	55.7	

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				SW10	SW11	SW12	SW13	NNB
Sampling date / time				28-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00	28-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-063	EP2518235-064	EP2518235-065	EP2518235-066	EP2518235-067
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	2	%	89.4	88.0	93.8	95.4	105
Toluene-D8	2037-26-5	2	%	87.8	97.3	97.4	91.8	99.9
4-Bromofluorobenzene	460-00-4	2	%	87.2	122	97.2	119	118
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	100	105	104	99.2	107
13C8-PFOA	----	0.02	%	101	99.9	102	102	98.6



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				NNBD	NEC6	NEC4	----	----
Sampling date / time				26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
				Result	Result	Result	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO ₃	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO ₃	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO ₃	71-52-3	1	mg/L	187	299	173	----	----
Total Alkalinity as CaCO ₃	----	1	mg/L	187	299	173	----	----
ED041G: Sulfate (Turbidimetric) as SO₄ 2- by DA								
Sulfate as SO ₄ - Turbidimetric	14808-79-8	1	mg/L	2140	3710	559	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	16100	26500	3170	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	396	708	182	----	----
Magnesium	7439-95-4	1	mg/L	967	1730	176	----	----
Sodium	7440-23-5	1	mg/L	8360	14600	1610	----	----
Potassium	7440-09-7	1	mg/L	308	516	50	----	----
EG020F: Dissolved Metals by ICP-MS								
Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	<0.001	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.00004	mg/L	<0.00004	<0.00004	<0.00004	----	----
EG049G LL-F: Dissolved Trivalent Chromium - Low Level								
Trivalent Chromium	16065-83-1	0.001	mg/L	<0.005	<0.005	<0.001	----	----
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level								
Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	<0.001	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Antimony	7440-36-0	0.5	µg/L	<0.5	<0.5	----	----	----
Arsenic	7440-38-2	0.5	µg/L	2.0	2.6	----	----	----
Barium	7440-39-3	1	µg/L	24	35	----	----	----
Beryllium	7440-41-7	0.1	µg/L	<0.1	<0.1	----	----	----
Boron	7440-42-8	100	µg/L	3690	5670	----	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				NNBD	NEC6	NEC4	----	----
Sampling date / time				26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
Result				Result	Result	Result	----	----

EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued

Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	----	----	----
Chromium	7440-47-3	0.5	µg/L	<0.5	0.7	----	----	----
Cobalt	7440-48-4	0.2	µg/L	<0.2	0.3	----	----	----
Copper	7440-50-8	1	µg/L	<1	<1	----	----	----
Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	----	----	----
Manganese	7439-96-5	0.5	µg/L	10.5	152	----	----	----
Molybdenum	7439-98-7	0.1	µg/L	9.3	10.1	----	----	----
Nickel	7440-02-0	0.5	µg/L	0.5	0.7	----	----	----
Selenium	7782-49-2	2	µg/L	<2	<2	----	----	----
Silver	7440-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Tin	7440-31-5	5	µg/L	<5	<5	----	----	----
Vanadium	7440-62-2	0.5	µg/L	1.8	4.0	----	----	----
Zinc	7440-66-6	5	µg/L	<5	<5	----	----	----

EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS

Antimony	7440-36-0	0.2	µg/L	----	----	<0.2	----	----
Selenium	7782-49-2	0.2	µg/L	----	----	0.9	----	----
Arsenic	7440-38-2	0.2	µg/L	----	----	1.6	----	----
Barium	7440-39-3	0.5	µg/L	----	----	130	----	----
Beryllium	7440-41-7	0.1	µg/L	----	----	<0.1	----	----
Boron	7440-42-8	5	µg/L	----	----	816	----	----
Cadmium	7440-43-9	0.05	µg/L	----	----	<0.05	----	----
Chromium	7440-47-3	0.2	µg/L	----	----	0.5	----	----
Cobalt	7440-48-4	0.1	µg/L	----	----	0.2	----	----
Copper	7440-50-8	0.5	µg/L	----	----	0.7	----	----
Lead	7439-92-1	0.1	µg/L	----	----	<0.1	----	----
Manganese	7439-96-5	0.5	µg/L	----	----	72.4	----	----
Molybdenum	7439-98-7	0.1	µg/L	----	----	21.4	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				NNBD	NEC6	NEC4	----	----
Sampling date / time				26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
Result				Result	Result	Result	----	----

EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS - Continued

Nickel	7440-02-0	0.5	µg/L	----	----	0.5	----	----
Silver	7440-22-4	0.1	µg/L	----	----	<0.1	----	----
Tin	7440-31-5	0.2	µg/L	----	----	<0.2	----	----
Vanadium	7440-62-2	0.2	µg/L	----	----	1.8	----	----
Zinc	7440-66-6	1	µg/L	----	----	<1	----	----

EN055: Ionic Balance

ø Total Anions	----	0.01	meq/L	502	831	105	----	----
ø Total Cations	----	0.01	meq/L	471	826	94.9	----	----
ø Ionic Balance	----	0.01	%	3.25	0.29	4.83	----	----

EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup

C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----

EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup

>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----

EP075(SIM)A: Phenolic Compounds

Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	NNBD	NEC6	NEC4	----	----
Sampling date / time					26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit		EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
					Result	Result	Result	----	----
EP075(SIM)A: Phenolic Compounds - Continued									
2,4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2,6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1,2,3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				NNBD	NEC6	NEC4	----	----
Sampling date / time				26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
				Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----
[^] C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----
[^] C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----
[^] >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----
[^] >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
[^] Total Xylenes	----	2	µg/L	<2	<2	<2	----	----
[^] Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID

				NNBD	NEC6	NEC4	----	----
Sampling date / time				26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.03	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.01	0.03	----	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.09	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.06	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	0.02	0.09	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.01	0.07	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.03	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: MARINE WATER
 (Matrix: WATER)

Sample ID				NNBD	NEC6	NEC4	----	----
Sampling date / time				26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----
				Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	0.02	0.04	0.50	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	0.01	0.06	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.04	0.47	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	12.6	17.4	13.1	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	30.3	39.4	32.8	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%	20.8	34.3	33.1	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	33.6	42.6	37.5	----	----
Anthracene-d10	1719-06-8	1.0	%	36.3	46.5	44.8	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	52.5	61.7	50.6	----	----



Analytical Results

Sub-Matrix: MARINE WATER (Matrix: WATER)				Sample ID	NNBD	NEC6	NEC4	----	----
Sampling date / time					26-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2518235-068	EP2518235-069	EP2518235-070	-----	-----	
Result				Result	Result	Result	---	---	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	96.3	107	93.6	----	----	
Toluene-D8	2037-26-5	2	%	96.8	94.0	95.2	----	----	
4-Bromofluorobenzene	460-00-4	2	%	112	86.2	117	----	----	
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%	103	96.1	106	----	----	
13C8-PFOA	----	0.02	%	101	103	106	----	----	

Sub-Matrix: **SEDIMENT**
(Matrix: **SOIL**)

Sampling date / time

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	CH1	CH2	CH2a	CH3	CH4
Sampling date / time				24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-001	EP2518235-002	EP2518235-003	EP2518235-004	EP2518235-005	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	30.0	32.8	40.9	27.1	27.7	
EG020-SD: Total Metals in Sediments by ICPMS									
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	
Chromium	7440-47-3	1.0	mg/kg	20.0	41.8	39.7	16.5	11.9	
Copper	7440-50-8	1.0	mg/kg	4.3	11.8	11.4	1.8	2.1	
Lead	7439-92-1	1.0	mg/kg	3.4	5.5	6.1	2.4	1.8	
Nickel	7440-02-0	1.0	mg/kg	6.7	16.7	16.2	6.1	4.4	
Zinc	7440-66-6	1.0	mg/kg	14.6	25.4	25.3	8.4	10.7	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	0.18	0.36	0.39	0.12	0.18	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3	
>C16 - C34 Fraction	----	3	mg/kg	<3	6	<3	3	<3	
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5	
>C10 - C40 Fraction (sum)	----	3	mg/kg	<3	6	<3	3	<3	
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3	
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3	
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3	
C15 - C28 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3	
C29 - C36 Fraction	----	5	mg/kg	<5	6	<5	<5	<5	
^ C10 - C36 Fraction (sum)	----	3	mg/kg	<3	6	<3	<3	<3	
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3	
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0	
EP080-SD: BTEXN									



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	CH1	CH2	CH2a	CH3	CH4
Sampling date / time				24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-001	EP2518235-002	EP2518235-003	EP2518235-004	EP2518235-005	
				Result	Result	Result	Result	Result	
EP080-SD: BTEXN - Continued									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
EP132B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	5	µg/kg	7	<5	----	<5	<5	
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	----	<5	<5	
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	----	<4	<4	
Acenaphthene	83-32-9	4	µg/kg	<4	<4	----	<4	<4	
Fluorene	86-73-7	4	µg/kg	<4	<4	----	<4	<4	
Phenanthrene	85-01-8	4	µg/kg	<4	<4	----	<4	<4	
Anthracene	120-12-7	4	µg/kg	<4	<4	----	<4	<4	
Fluoranthene	206-44-0	4	µg/kg	<4	<4	----	<4	<4	
Pyrene	129-00-0	4	µg/kg	<4	<4	----	<4	<4	
Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	----	<4	<4	
Chrysene	218-01-9	4	µg/kg	<4	<4	----	<4	<4	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<4	<4	----	<4	<4	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	----	<4	<4	
Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	----	<4	<4	
Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	----	<4	<4	
Perylene	198-55-0	4	µg/kg	<4	<4	----	<4	<4	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	----	<4	<4	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	----	<4	<4	



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				CH1	CH2	CH2a	CH3	CH4
Sampling date / time				24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-001	EP2518235-002	EP2518235-003	EP2518235-004	EP2518235-005
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	<4	<4	----	<4	<4
Coronene	191-07-1	5	µg/kg	<5	<5	----	<5	<5
^ Sum of PAHs	----	4	µg/kg	7	<4	----	<4	<4
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	<4	<4	----	<4	<4
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	5	5	----	5	5
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	10	10	----	10	10
EP080-SD: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	108	101	102	101	98.9
Toluene-D8	2037-26-5	0.2	%	98.9	92.3	91.1	92.5	91.4
4-Bromofluorobenzene	460-00-4	0.2	%	111	107	106	104	105
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	97.6	97.4	----	111	102
Anthracene-d10	1719-06-8	10	%	97.4	99.2	----	99.9	97.4
4-Terphenyl-d14	1718-51-0	10	%	95.7	88.5	----	89.2	90.4



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				CH5	CH6	CH7	SB1	SB1a
Sampling date / time				26-Oct-2025 00:00	25-Oct-2025 00:00	25-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-006	EP2518235-007	EP2518235-008	EP2518235-009	EP2518235-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	27.0	36.9	36.4	----	44.7
ED040T : Total Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	----	----	----	----	6450
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	----	----	----	----	0.35
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	12.4	40.4	17.4	49.7	51.7
Copper	7440-50-8	1.0	mg/kg	2.0	6.0	1.9	50.0	55.0
Lead	7439-92-1	1.0	mg/kg	2.1	3.5	2.1	7.8	8.2
Nickel	7440-02-0	1.0	mg/kg	3.9	16.0	5.5	19.8	20.8
Zinc	7440-66-6	1.0	mg/kg	10.2	15.8	6.9	47.6	47.5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	----	----	----	----
EK085M: Sulfide as S2-								
ø Sulfide as S	----	0.01	%	----	----	----	----	0.14
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.15	0.42	0.22	----	0.54
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	4	<3	----	<3
>C16 - C34 Fraction	----	3	mg/kg	6	7	6	----	6
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	----	5
>C10 - C40 Fraction (sum)	----	3	mg/kg	6	11	6	----	11
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	4	<3	----	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	----	<3
C10 - C14 Fraction	----	3	mg/kg	<3	4	<3	----	<3



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				CH5	CH6	CH7	SB1	SB1a
Sampling date / time				26-Oct-2025 00:00	25-Oct-2025 00:00	25-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-006	EP2518235-007	EP2518235-008	EP2518235-009	EP2518235-010
				Result	Result	Result	Result	Result
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	3	mg/kg	<3	4	<3	----	<3
C29 - C36 Fraction	----	5	mg/kg	<5	5	6	----	7
[^] C10 - C36 Fraction (sum)	----	3	mg/kg	<3	13	6	----	7
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	----	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	----	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
[^] Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
[^] Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
EP132B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	5	µg/kg	<5	<5	<5	<5	----
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	----
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	----
Acenaphthene	83-32-9	4	µg/kg	<4	<4	<4	<4	----
Fluorene	86-73-7	4	µg/kg	<4	<4	<4	<4	----
Phenanthrene	85-01-8	4	µg/kg	<4	<4	<4	<4	----
Anthracene	120-12-7	4	µg/kg	<4	<4	<4	<4	----
Fluoranthene	206-44-0	4	µg/kg	<4	<4	<4	<4	----
Pyrene	129-00-0	4	µg/kg	<4	<4	<4	<4	----
Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	<4	<4	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				CH5	CH6	CH7	SB1	SB1a
Sampling date / time				26-Oct-2025 00:00	25-Oct-2025 00:00	25-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-006	EP2518235-007	EP2518235-008	EP2518235-009	EP2518235-010
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Chrysene	218-01-9	4	µg/kg	<4	<4	<4	<4	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<4	<4	<4	<4	----
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	<4	<4	----
Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	<4	<4	----
Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	<4	<4	----
Perylene	198-55-0	4	µg/kg	<4	<4	<4	<4	----
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	<4	<4	----
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	<4	<4	----
Indeno(1,2,3,cd)pyrene	193-39-5	4	µg/kg	<4	<4	<4	<4	----
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	----
^ Sum of PAHs	----	4	µg/kg	<4	<4	<4	<4	----
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	<4	<4	<4	<4	----
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	5	5	5	5	----
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	10	10	10	10	----
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	101	91.8	92.7	----	107
Toluene-D8	2037-26-5	0.2	%	92.1	81.3	99.1	----	97.7
4-Bromofluorobenzene	460-00-4	0.2	%	103	91.8	112	----	114
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	101	74.8	104	107	----
Anthracene-d10	1719-06-8	10	%	102	70.7	107	102	----
4-Terphenyl-d14	1718-51-0	10	%	93.9	64.0	96.1	103	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				SB2	SB3	SB4	SB5	DO3
Sampling date / time				26-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-011	EP2518235-012	EP2518235-013	EP2518235-014	EP2518235-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	----	----	----	42.9
ED040T : Total Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	----	----	----	----	6070
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	----	----	----	----	0.31
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	33.8	37.2	35.5	40.6	43.6
Copper	7440-50-8	1.0	mg/kg	20.7	17.8	12.8	12.1	15.4
Lead	7439-92-1	1.0	mg/kg	5.9	5.4	5.0	5.3	4.7
Nickel	7440-02-0	1.0	mg/kg	13.7	15.0	14.3	16.1	17.5
Zinc	7440-66-6	1.0	mg/kg	27.8	27.0	24.0	25.6	80.3
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	----	----	----	----	<0.01
EK085M: Sulfide as S2-								
ø Sulfide as S	----	0.01	%	----	----	----	----	0.11
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	----	----	----	----	0.51
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	----	----	----	----	<3
>C16 - C34 Fraction	----	3	mg/kg	----	----	----	----	14
>C34 - C40 Fraction	----	5	mg/kg	----	----	----	----	10
>C10 - C40 Fraction (sum)	----	3	mg/kg	----	----	----	----	24
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	----	----	----	----	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	----	----	----	----	<3
C10 - C14 Fraction	----	3	mg/kg	----	----	----	----	<3



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				SB2	SB3	SB4	SB5	DO3
Sampling date / time				26-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-011	EP2518235-012	EP2518235-013	EP2518235-014	EP2518235-015
				Result	Result	Result	Result	Result
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	3	mg/kg	----	----	----	----	4
C29 - C36 Fraction	----	5	mg/kg	----	----	----	----	13
[^] C10 - C36 Fraction (sum)	----	3	mg/kg	----	----	----	----	17
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	----	----	----	----	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	----	----	----	----	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	----	----	<0.2
Toluene	108-88-3	0.2	mg/kg	----	----	----	----	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	----	----	----	----	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	----	----	----	----	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	----	----	----	----	<0.2
[^] Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
[^] Sum of BTEX	----	0.2	mg/kg	----	----	----	----	<0.2
Naphthalene	91-20-3	0.2	mg/kg	----	----	----	----	<0.2
EP132B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	5	µg/kg	<5	<5	<5	<5	----
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	----
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	----
Acenaphthene	83-32-9	4	µg/kg	5	<4	<4	<4	----
Fluorene	86-73-7	4	µg/kg	<4	<4	<4	<4	----
Phenanthrene	85-01-8	4	µg/kg	10	19	<4	<4	----
Anthracene	120-12-7	4	µg/kg	<4	4	<4	<4	----
Fluoranthene	206-44-0	4	µg/kg	22	37	6	6	----
Pyrene	129-00-0	4	µg/kg	18	29	6	5	----
Benz(a)anthracene	56-55-3	4	µg/kg	11	20	<4	<4	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	SB2	SB3	SB4	SB5	DO3
Sampling date / time				26-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	24-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-011	EP2518235-012	EP2518235-013	EP2518235-014	EP2518235-015	
				Result	Result	Result	Result	Result	
EP132B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	4	µg/kg	12	18	<4	<4	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	16	25	6	<4	----	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	6	10	<4	<4	----	
Benzo(e)pyrene	192-97-2	4	µg/kg	9	15	<4	<4	----	
Benzo(a)pyrene	50-32-8	4	µg/kg	12	21	<4	<4	----	
Perylene	198-55-0	4	µg/kg	<4	5	<4	<4	----	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	10	15	<4	<4	----	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	<4	<4	----	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	7	10	<4	<4	----	
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	----	
^ Sum of PAHs	----	4	µg/kg	138	228	18	11	----	
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	16	28	<4	<4	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	18	30	5	5	----	
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	20	32	10	10	----	
EP262: Ethanolamines									
Ethanolamine	141-43-5	10	mg/kg	----	----	----	----	<10	
Diethanolamine	111-42-2	10	mg/kg	----	----	----	----	<10	
Methyl diethanolamine (MDEA)	105-59-9	10	mg/kg	----	----	----	----	<10	
EP080-SD: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	----	----	96.7	
Toluene-D8	2037-26-5	0.2	%	----	----	----	----	88.7	
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	----	----	105	
EP132T: Base/Neutral Extractable Surrogates - SD									
2-Fluorobiphenyl	321-60-8	10	%	101	102	107	100	----	
Anthracene-d10	1719-06-8	10	%	97.3	101	116	105	----	
4-Terphenyl-d14	1718-51-0	10	%	89.6	92.4	105	97.6	----	



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				DO1	DO2	DO4	DO4a	DO5
Sampling date / time				26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-016	EP2518235-017	EP2518235-018	EP2518235-019	EP2518235-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	37.3	42.8	40.1	37.5	36.9
ED040T : Total Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	7670	10200	6170	5570	6350
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.32	0.27	0.36	0.31	0.35
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	36.5	41.1	40.7	39.1	39.1
Copper	7440-50-8	1.0	mg/kg	9.6	112	7.6	7.2	7.6
Lead	7439-92-1	1.0	mg/kg	3.9	4.6	3.7	3.7	3.7
Nickel	7440-02-0	1.0	mg/kg	14.1	16.7	15.2	14.6	15.0
Zinc	7440-66-6	1.0	mg/kg	40.5	33.1	25.2	21.0	21.4
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.01	<0.01	<0.01
EK085M: Sulfide as S2-								
ø Sulfide as S	----	0.01	%	0.06	<0.01	0.15	0.12	0.14
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.35	0.45	0.41	0.35	0.34
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	13	5	10	5	<3
>C34 - C40 Fraction	----	5	mg/kg	10	6	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	23	11	10	5	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				DO1	DO2	DO4	DO4a	DO5
Sampling date / time				26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-016	EP2518235-017	EP2518235-018	EP2518235-019	EP2518235-020
				Result	Result	Result	Result	Result
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	3	mg/kg	4	<3	6	<3	<3
C29 - C36 Fraction	----	5	mg/kg	13	7	5	5	<5
[^] C10 - C36 Fraction (sum)	----	3	mg/kg	17	7	11	5	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
[^] Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
[^] Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP262: Ethanolamines								
Ethanolamine	141-43-5	10	mg/kg	<10	<10	<10	<10	<10
Diethanolamine	111-42-2	10	mg/kg	<10	<10	<10	<10	<10
Methyl diethanolamine (MDEA)	105-59-9	10	mg/kg	<10	<10	<10	<10	<10
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	100	107	106	98.7	104
Toluene-D8	2037-26-5	0.2	%	92.1	99.0	98.8	90.3	97.7
4-Bromofluorobenzene	460-00-4	0.2	%	105	113	111	102	110

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	DO6	DO7	DO7a	SB12	HC
Sampling date / time				26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	24-Oct-2025 00:00	[24-Oct-2025]	
Compound	CAS Number	LOR	Unit	EP2518235-021	EP2518235-022	EP2518235-023	EP2518235-024	EP2518235-025	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	35.1	35.5	35.9	----	36.9	
ED040T : Total Sulfate by ICPAES									
Sulfate as SO4 2-	14808-79-8	100	mg/kg	5710	6040	6400	----	7790	
ED042T: Total Sulfur by LECO									
Sulfur - Total as S (LECO)	----	0.01	%	0.33	0.32	0.31	----	0.30	
EG020-SD: Total Metals in Sediments by ICPMS									
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	
Chromium	7440-47-3	1.0	mg/kg	33.0	28.6	30.8	68.3	24.4	
Copper	7440-50-8	1.0	mg/kg	5.7	5.5	6.2	29.2	3.5	
Lead	7439-92-1	1.0	mg/kg	3.4	3.0	3.2	5.6	2.6	
Nickel	7440-02-0	1.0	mg/kg	11.9	10.2	11.5	20.5	9.8	
Zinc	7440-66-6	1.0	mg/kg	16.5	20.7	20.0	35.6	6.9	
EG035E: 1M HCl extractable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg	----	----	----	----	<0.01	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01	
EK085M: Sulfide as S2-									
ø Sulfide as S	----	0.01	%	0.14	0.12	0.10	----	0.04	
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%	0.29	0.28	0.31	----	0.31	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	----	5	
>C16 - C34 Fraction	----	3	mg/kg	<3	<3	3	----	14	
>C34 - C40 Fraction	----	5	mg/kg	<5	<5	<5	----	8	
>C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	3	----	27	
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	----	5	
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				DO6	DO7	DO7a	SB12	HC
Sampling date / time				26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	24-Oct-2025 00:00	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-021	EP2518235-022	EP2518235-023	EP2518235-024	EP2518235-025
				Result	Result	Result	Result	Result
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	----	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	----	5
C15 - C28 Fraction	----	3	mg/kg	<3	<3	<3	----	6
C29 - C36 Fraction	----	5	mg/kg	<5	<5	<5	----	13
[^] C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	<3	----	24
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	----	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	----	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
[^] Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
[^] Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
EP132B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	5	µg/kg	----	----	----	<5	----
2-Methylnaphthalene	91-57-6	5	µg/kg	----	----	----	<5	----
Acenaphthylene	208-96-8	4	µg/kg	----	----	----	<4	----
Acenaphthene	83-32-9	4	µg/kg	----	----	----	<4	----
Fluorene	86-73-7	4	µg/kg	----	----	----	<4	----
Phenanthrene	85-01-8	4	µg/kg	----	----	----	<4	----
Anthracene	120-12-7	4	µg/kg	----	----	----	<4	----
Fluoranthene	206-44-0	4	µg/kg	----	----	----	7	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				DO6	DO7	DO7a	SB12	HC
Sampling date / time				26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	24-Oct-2025 00:00	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-021	EP2518235-022	EP2518235-023	EP2518235-024	EP2518235-025
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	4	µg/kg	----	----	----	6	----
Benz(a)anthracene	56-55-3	4	µg/kg	----	----	----	<4	----
Chrysene	218-01-9	4	µg/kg	----	----	----	5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	----	----	----	6	----
Benzo(k)fluoranthene	207-08-9	4	µg/kg	----	----	----	<4	----
Benzo(e)pyrene	192-97-2	4	µg/kg	----	----	----	<4	----
Benzo(a)pyrene	50-32-8	4	µg/kg	----	----	----	4	----
Perylene	198-55-0	4	µg/kg	----	----	----	<4	----
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	----	----	----	<4	----
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	----	----	----	<4	----
Indeno(1,2,3-cd)pyrene	193-39-5	4	µg/kg	----	----	----	<4	----
Coronene	191-07-1	5	µg/kg	----	----	----	<5	----
^ Sum of PAHs	----	4	µg/kg	----	----	----	28	----
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	----	----	----	5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	----	----	----	7	----
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	----	----	----	10	----
EP262: Ethanolamines								
Ethanolamine	141-43-5	10	mg/kg	<10	<10	<10	----	----
Diethanolamine	111-42-2	10	mg/kg	<10	<10	<10	----	----
Methyl diethanolamine (MDEA)	105-59-9	10	mg/kg	<10	<10	<10	----	----
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	89.3	91.5	91.1	----	98.5
Toluene-D8	2037-26-5	0.2	%	92.5	86.2	86.0	----	90.1
4-Bromofluorobenzene	460-00-4	0.2	%	104	96.4	96.3	----	101
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	----	----	----	100	----
Anthracene-d10	1719-06-8	10	%	----	----	----	103	----



Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	DO6	DO7	DO7a	SB12	HC
Sampling date / time					26-Oct-2025 00:00	26-Oct-2025 00:00	26-Oct-2025 00:00	24-Oct-2025 00:00	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-021	EP2518235-022	EP2518235-023	EP2518235-024	EP2518235-025	
				Result	Result	Result	Result	Result	
EP132T: Base/Neutral Extractable Surrogates - SD - Continued									
4-Terphenyl-d14	1718-51-0	10	%	----	----	----	90.9	----	



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID				WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026	EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	52.4	25.8	29.1	23.3	43.7
ED040T : Total Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	6910	2290	5470	2750	5150
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.78	0.13	0.19	0.15	0.57
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	15	5	----
Barium	7440-39-3	10	mg/kg	----	----	<10	10	----
Beryllium	7440-41-7	1	mg/kg	----	----	<1	<1	----
Boron	7440-42-8	50	mg/kg	----	----	<50	<50	----
Cadmium	7440-43-9	1	mg/kg	----	----	<1	<1	----
Chromium	7440-47-3	2	mg/kg	----	----	11	12	----
Cobalt	7440-48-4	2	mg/kg	----	----	<2	<2	----
Copper	7440-50-8	5	mg/kg	----	----	<5	<5	----
Lead	7439-92-1	5	mg/kg	----	----	<5	<5	----
Manganese	7439-96-5	5	mg/kg	----	----	82	83	----
Nickel	7440-02-0	2	mg/kg	----	----	3	5	----
Selenium	7782-49-2	5	mg/kg	----	----	<5	<5	----
Vanadium	7440-62-2	5	mg/kg	----	----	10	10	----
Zinc	7440-66-6	5	mg/kg	----	----	10	45	----
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Chromium	7440-47-3	1.0	mg/kg	87.1	21.4	13.4	14.2	24.6
Copper	7440-50-8	1.0	mg/kg	20.1	5.1	1.4	3.9	9.2
Lead	7439-92-1	1.0	mg/kg	6.9	5.6	2.3	3.1	7.1
Nickel	7440-02-0	1.0	mg/kg	37.2	11.5	4.5	6.5	11.1
Zinc	7440-66-6	1.0	mg/kg	43.5	27.9	12.2	53.7	248



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026	EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030
				Result	Result	Result	Result	Result
EG035E: 1M HCl extractable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	0.02	<0.01	<0.01	0.02	0.10
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	----	----	<0.1	0.2	5.3
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	----	----	240	480	1970
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	----	----	240	480	1980
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	----	----	338	227	393
EK085M: Sulfide as S2-								
ø Sulfide as S	----	0.01	%	0.55	0.05	<0.01	0.06	0.40
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	5.99	0.85	0.12	0.41	1.22
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	----	----	<0.5	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	----	----	<0.5	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	----	----	<0.5	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	<1	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg	----	----	<0.5	<0.5	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	----	----	<0.5	<0.5	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	----	----	<0.5	<0.5	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	----	----	<0.5	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	----	<0.5	<0.5	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	----	----	<0.5	<0.5	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	----	----	<0.5	<0.5	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026	EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Pentachlorophenol	87-86-5	2	mg/kg	----	----	<2	<2	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	17	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	213	19	4	<3	<3
>C34 - C40 Fraction	----	5	mg/kg	46	<5	<5	<5	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	276	19	4	<3	<3
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	17	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	17	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg	89	4	<3	<3	<3
C29 - C36 Fraction	----	5	mg/kg	151	17	<5	<5	<5
^A C10 - C36 Fraction (sum)	----	3	mg/kg	257	21	<3	<3	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^A Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^A Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

EP132B: Polynuclear Aromatic Hydrocarbons



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026	EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	5	µg/kg	----	----	<5	<5	----
2-Methylnaphthalene	91-57-6	5	µg/kg	----	----	<5	<5	----
Acenaphthylene	208-96-8	4	µg/kg	----	----	<4	<4	----
Acenaphthene	83-32-9	4	µg/kg	----	----	<4	<4	----
Fluorene	86-73-7	4	µg/kg	----	----	<4	<4	----
Phenanthrene	85-01-8	4	µg/kg	----	----	<4	<4	----
Anthracene	120-12-7	4	µg/kg	----	----	<4	<4	----
Fluoranthene	206-44-0	4	µg/kg	----	----	<4	<4	----
Pyrene	129-00-0	4	µg/kg	----	----	<4	<4	----
Benz(a)anthracene	56-55-3	4	µg/kg	----	----	<4	<4	----
Chrysene	218-01-9	4	µg/kg	----	----	<4	<4	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	----	----	<4	<4	----
Benzo(k)fluoranthene	207-08-9	4	µg/kg	----	----	<4	<4	----
Benzo(e)pyrene	192-97-2	4	µg/kg	----	----	<4	<4	----
Benzo(a)pyrene	50-32-8	4	µg/kg	----	----	<4	<4	----
Perylene	198-55-0	4	µg/kg	----	----	<4	<4	----
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	----	----	<4	<4	----
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	----	----	<4	<4	----
Indeno(1,2,3.cd)pyrene	193-39-5	4	µg/kg	----	----	<4	<4	----
Coronene	191-07-1	5	µg/kg	----	----	<5	<5	----
^ Sum of PAHs	----	4	µg/kg	----	----	<4	<4	----
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	----	----	<4	<4	----
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	----	----	5	5	----
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	----	----	10	10	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	----	----	<0.0005	<0.0005	----



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026	EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	----	<0.0002	0.0003	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	----	<0.001	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	----	<0.0002	0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	----	<0.0002	0.0006	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	----	<0.0002	0.0007	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	----	<0.0002	0.0007	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	----	<0.0002	0.0003	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.0002	mg/kg	----	----	<0.0002	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	----	<0.0005	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	----	<0.0002	<0.0002	----

Sub-Matrix: **SEDIMENT**
(Matrix: **SOIL**)

Sampling date / time

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID		WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]		[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026		EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030	
				Result		Result	Result	Result	Result	
EP231C: Perfluoroalkyl Sulfonamides - Continued										
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	----		----	<0.0002	<0.0002	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	----		----	<0.0002	<0.0002	----	
EP231D: (n:2) Fluorotelomer Sulfonic Acids										
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----		----	<0.0005	<0.0005	----	
EP231P: PFAS Sums										
Sum of PFAS	----	0.0002	mg/kg	----		----	<0.0002	0.0028	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----		----	<0.0002	0.0003	----	
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----		----	<0.0002	0.0018	----	
EP262: Ethanolamines										
Ethanolamine	141-43-5	10	mg/kg	----		----	<10	<10	<10	
Diethanolamine	111-42-2	10	mg/kg	----		----	<10	<10	<10	
Methyl diethanolamine (MDEA)	105-59-9	10	mg/kg	----		----	<10	<10	<10	
EP075(SIM)S: Phenolic Compound Surrogates										



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				WB	CZ	NNB	NNBD	NNBDU
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-026	EP2518235-027	EP2518235-028	EP2518235-029	EP2518235-030
				Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
Phenol-d6	13127-88-3	0.5	%	----	----	116	115	----
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	111	111	----
2,4,6-Tribromophenol	118-79-6	0.5	%	----	----	84.3	79.9	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	108	107	----
Anthracene-d10	1719-06-8	0.5	%	----	----	112	123	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	123	120	----
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	98.8	95.0	97.7	101	96.1
Toluene-D8	2037-26-5	0.2	%	91.3	96.9	91.0	89.3	88.6
4-Bromofluorobenzene	460-00-4	0.2	%	104	106	101	100	95.8
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	----	----	118	111	----
13C8-PFOA	----	0.0002	%	----	----	110	112	----
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	----	----	100	97.6	----
Anthracene-d10	1719-06-8	10	%	----	----	98.0	101	----
4-Terphenyl-d14	1718-51-0	10	%	----	----	91.2	87.8	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID				CC	WC	NEC	NB	SCB
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-031	EP2518235-032	EP2518235-033	EP2518235-034	EP2518235-035
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	38.1	26.5	61.5	28.4	22.7
ED040T : Total Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	6390	2970	9160	5830	3460
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	0.37	0.25	1.27	0.18	0.12
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	7440-47-3	1.0	mg/kg	35.1	13.7	83.5	10.7	10.2
Copper	7440-50-8	1.0	mg/kg	5.2	2.8	19.1	1.2	1.3
Lead	7439-92-1	1.0	mg/kg	2.7	1.3	9.8	1.1	1.4
Nickel	7440-02-0	1.0	mg/kg	14.3	7.3	33.5	3.8	3.8
Zinc	7440-66-6	1.0	mg/kg	10.7	6.5	77.9	4.0	8.8
EG035E: 1M HCl extractable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.14	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	----	----	----	----	0.4
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	----	----	----	----	240
EK062: Total Nitrogen as N (TKN + NOx)								
^A Total Nitrogen as N	----	20	mg/kg	----	----	----	----	240
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	----	----	----	----	293
EK085M: Sulfide as S2-								
ø Sulfide as S	----	0.01	%	0.16	0.15	0.96	<0.01	<0.01
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	0.91	0.60	6.55	0.19	0.19



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				CC	WC	NEC	NB	SCB
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-031	EP2518235-032	EP2518235-033	EP2518235-034	EP2518235-035
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
>C16 - C34 Fraction	----	3	mg/kg	211	74	56	128	4
>C34 - C40 Fraction	----	5	mg/kg	79	16	10	21	<5
>C10 - C40 Fraction (sum)	----	3	mg/kg	290	90	66	149	4
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	<3	<3	<3
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C15 - C28 Fraction	----	3	mg/kg	68	40	19	38	<3
C29 - C36 Fraction	----	5	mg/kg	177	40	39	99	<5
[^] C10 - C36 Fraction (sum)	----	3	mg/kg	245	80	58	137	<3
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
[^] Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
[^] Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	----	<0.0005	<0.0005	----	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				CC	WC	NEC	NB	SCB
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-031	EP2518235-032	EP2518235-033	EP2518235-034	EP2518235-035
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	<0.0002	0.0010	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	0.0003	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	0.0009	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	<0.0002	0.0018	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	0.0017	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	0.0011	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	<0.0002	----	----

Sub-Matrix: **SEDIMENT**
(Matrix: **SOIL**)

Sampling date / time

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	CC	WC	NEC	NB	SCB
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	
Compound	CAS Number	LOR	Unit	EP2518235-031	EP2518235-032	EP2518235-033	EP2518235-034	EP2518235-035	
				Result	Result	Result	Result	Result	
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	----	<0.0002	<0.0002	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	----	<0.0002	<0.0002	----	----	
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----	<0.0005	<0.0005	----	----	
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg	----	<0.0002	0.0072	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----	<0.0002	0.0010	----	----	
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----	<0.0002	0.0042	----	----	
EP262: Ethanolamines									
Ethanolamine	141-43-5	10	mg/kg	----	----	<10	----	<10	
Diethanolamine	111-42-2	10	mg/kg	----	----	<10	----	<10	
Methyl diethanolamine (MDEA)	105-59-9	10	mg/kg	----	----	<10	----	<10	
EP080-SD: TPH(V)/BTEX Surrogates									



Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	CC	WC	NEC	NB	SCB
Sampling date / time					[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-031	EP2518235-032	EP2518235-033	EP2518235-034	EP2518235-035	
				Result	Result	Result	Result	Result	Result
EP080-SD: TPH(V)/BTEX Surrogates - Continued									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	102	92.7	96.6	90.2	91.3	
Toluene-D8	2037-26-5	0.2	%	95.5	95.6	88.8	89.7	89.3	
4-Bromofluorobenzene	460-00-4	0.2	%	105	105	99.7	97.4	100	
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%	----	120	120	----	----	
13C8-PFOA	----	0.0002	%	----	115	114	----	----	



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	51.7	31.6	46.1	33.4	27.6
ED040T : Total Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	100	mg/kg	9030	----	----	----	----
ED042T: Total Sulfur by LECO								
Sulfur - Total as S (LECO)	----	0.01	%	1.59	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	----	40	60	70	70
Beryllium	7440-41-7	1	mg/kg	----	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	----	50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	----	<1	2	<1	<1
Chromium	7440-47-3	2	mg/kg	----	23	23	17	17
Cobalt	7440-48-4	2	mg/kg	----	6	6	5	8
Copper	7440-50-8	5	mg/kg	----	10	12	9	11
Lead	7439-92-1	5	mg/kg	----	6	9	6	7
Manganese	7439-96-5	5	mg/kg	----	410	420	613	602
Nickel	7440-02-0	2	mg/kg	----	11	12	9	11
Selenium	7782-49-2	5	mg/kg	----	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	21	21	21	23
Zinc	7440-66-6	5	mg/kg	----	103	317	124	123
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.5	2.0	0.4	0.4
Chromium	7440-47-3	1.0	mg/kg	56.9	25.0	25.1	19.1	18.3
Copper	7440-50-8	1.0	mg/kg	20.1	8.9	11.4	8.5	10.1
Lead	7439-92-1	1.0	mg/kg	7.6	6.9	9.9	6.3	7.6
Nickel	7440-02-0	1.0	mg/kg	25.4	13.0	13.1	10.3	11.9
Zinc	7440-66-6	1.0	mg/kg	36.8	94.4	296	101	98.3



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

				Sample ID	KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time					[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit		EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
					Result	Result	Result	Result	Result
EG035E: 1M HCl extractable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		<0.01	0.02	0.02	<0.01	0.02
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.01	mg/kg		0.02	0.09	0.22	0.08	0.05
EG036: Methyl Mercury									
Methyl mercury	22967-92-6	0.10	mg/kg		----	<0.10	<0.10	<0.10	<0.10
EK085M: Sulfide as S²⁻									
ø Sulfide as S	----	0.01	%		1.29	----	----	----	----
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		5.08	4.93	6.75	3.00	1.73
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		----	<2	<2	<2	<2
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		<3	<3	16	6	4
>C16 - C34 Fraction	----	3	mg/kg		14	38	221	56	40
>C34 - C40 Fraction	----	5	mg/kg		5	21	72	15	12
>C10 - C40 Fraction (sum)	----	3	mg/kg		19	59	309	77	56



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	<3	<3	16	6	4
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	<3	<3	12	4	3
C15 - C28 Fraction	----	3	mg/kg	<3	<3	77	24	20
C29 - C36 Fraction	----	5	mg/kg	11	46	180	41	27
^A C10 - C36 Fraction (sum)	----	3	mg/kg	11	46	269	69	50
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^A Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^A Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP132B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	5	µg/kg	----	<5	<5	<5	<5
2-Methylnaphthalene	91-57-6	5	µg/kg	----	<5	<5	<5	<5
Acenaphthylene	208-96-8	4	µg/kg	----	<4	<4	<4	<4
Acenaphthene	83-32-9	4	µg/kg	----	<4	<4	<4	<4
Fluorene	86-73-7	4	µg/kg	----	<4	<4	<4	<4
Phenanthrene	85-01-8	4	µg/kg	----	<4	<4	<4	<4



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	4	µg/kg	----	<4	<4	<4	<4
Fluoranthene	206-44-0	4	µg/kg	----	<4	<4	<4	<4
Pyrene	129-00-0	4	µg/kg	----	<4	<4	<4	<4
Benz(a)anthracene	56-55-3	4	µg/kg	----	<4	<4	<4	<4
Chrysene	218-01-9	4	µg/kg	----	<4	<4	<4	<4
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	----	<4	<4	<4	<4
Benzo(k)fluoranthene	207-08-9	4	µg/kg	----	<4	<4	<4	<4
Benzo(e)pyrene	192-97-2	4	µg/kg	----	<4	<4	<4	<4
Benzo(a)pyrene	50-32-8	4	µg/kg	----	<4	<4	<4	<4
Perylene	198-55-0	4	µg/kg	----	<4	<4	<4	<4
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	----	<4	<4	<4	<4
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	----	<4	<4	<4	<4
Indeno(1,2,3-cd)pyrene	193-39-5	4	µg/kg	----	<4	<4	<4	<4
Coronene	191-07-1	5	µg/kg	----	<5	<5	<5	<5
^ Sum of PAHs	----	4	µg/kg	----	<4	<4	<4	<4
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	----	<4	<4	<4	<4
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	----	5	5	5	5
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	----	10	10	10	10
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	----	0.0005	<0.0005	<0.0005	<0.0005
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	0.0019	0.0005	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	0.0019	0.0006	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	0.0142	0.0043	0.0005	0.0015
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	0.0009	0.0003	<0.0002	<0.0002



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

				Sample ID	KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time					[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit		EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	0.0364	0.0200	0.0026	0.0041	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	<0.0002	<0.0002	<0.0002	
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	----	<0.0002	<0.0002	<0.0002	<0.0002	
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	0.027	0.007	0.001	0.004	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	0.0409	0.0062	0.0014	0.0046	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	0.0528	0.0074	0.0018	0.0055	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	0.0822	0.0162	0.0031	0.0085	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	0.0557	0.0119	0.0022	0.0053	
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	0.0201	0.0077	0.0014	0.0023	
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	0.0075	0.0074	0.0026	0.0035	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	0.0006	0.0023	0.0028	0.0022	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	0.0008	0.0013	0.0010	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	<0.0002	<0.0002	<0.0002	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005	
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	<0.0002	<0.0002	<0.0002	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005	



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	----	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	----	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	----	0.343	0.0926	0.0207	0.0425
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----	0.0506	0.0243	0.0031	0.0056
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----	0.311	0.0735	0.0126	0.0335
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	111	98.7	95.1	99.0
2-Chlorophenol-D4	93951-73-6	0.5	%	----	117	98.9	94.2	97.4
2,4,6-Tribromophenol	118-79-6	0.5	%	----	85.4	81.7	75.8	78.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	103	94.0	89.6	88.9
Anthracene-d10	1719-06-8	0.5	%	----	117	99.8	95.6	102
4-Terphenyl-d14	1718-51-0	0.5	%	----	129	105	101	114
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	100	102	84.3	98.5	96.4
Toluene-D8	2037-26-5	0.2	%	96.2	95.4	87.1	94.1	94.9

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				KB	NEC1a	NEC1b	NEC2a	NEC2b
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-036	EP2518235-037	EP2518235-038	EP2518235-039	EP2518235-040
				Result	Result	Result	Result	Result
EP080-SD: TPH(V)/BTEX Surrogates - Continued								
4-Bromofluorobenzene	460-00-4	0.2	%	104	104	94.6	103	103
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	----	120	114	112	112
13C8-PFOA	----	0.0002	%	----	114	112	114	116
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	----	82.5	81.4	109	90.9
Anthracene-d10	1719-06-8	10	%	----	79.7	94.2	102	86.2
4-Terphenyl-d14	1718-51-0	10	%	----	77.3	102	100	76.4



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	37.1	31.0	35.6	25.8	47.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	7	<5	6
Barium	7440-39-3	10	mg/kg	60	80	40	20	10
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	7	12	12	13	24
Cobalt	7440-48-4	2	mg/kg	5	9	7	6	6
Copper	7440-50-8	5	mg/kg	<5	7	6	6	11
Lead	7439-92-1	5	mg/kg	<5	6	6	5	7
Manganese	7439-96-5	5	mg/kg	956	478	1620	753	158
Nickel	7440-02-0	2	mg/kg	6	11	9	9	12
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	11	23	14	13	23
Zinc	7440-66-6	5	mg/kg	44	41	54	46	220
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	0.1	<0.1	<0.1	<0.1	0.2
Chromium	7440-47-3	1.0	mg/kg	8.3	12.7	12.9	13.8	25.5
Copper	7440-50-8	1.0	mg/kg	4.7	6.7	5.7	5.7	10.6
Lead	7439-92-1	1.0	mg/kg	4.2	6.4	6.3	5.7	7.7
Nickel	7440-02-0	1.0	mg/kg	6.9	12.2	9.9	9.8	13.4
Zinc	7440-66-6	1.0	mg/kg	43.5	44.9	58.2	48.0	168
EG035E: 1M HCl extractable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	0.05	0.02	0.03	0.02	0.27



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

				Sample ID	NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time					[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit		EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045
					Result	Result	Result	Result	Result
EG036: Methyl Mercury									
Methyl mercury	22967-92-6	0.10	mg/kg		<0.10	<0.10	<0.10	<0.10	<0.10
EP003: Total Organic Carbon (TOC) in Soil									
Total Organic Carbon	----	0.02	%		1.88	1.07	1.34	1.16	5.15
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	3	mg/kg		6	3	<3	<3	10
>C16 - C34 Fraction	----	3	mg/kg		87	40	36	19	143
>C34 - C40 Fraction	----	5	mg/kg		30	18	12	6	21
>C10 - C40 Fraction (sum)	----	3	mg/kg		123	61	48	25	174
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg		6	3	<3	<3	10
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	3	mg/kg		<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg		4	<3	<3	<3	5
C15 - C28 Fraction	----	3	mg/kg		29	14	8	5	71
C29 - C36 Fraction	----	5	mg/kg		72	38	35	17	84



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045
				Result	Result	Result	Result	Result
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	3	mg/kg	105	52	43	22	160
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP132B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	5	µg/kg	<5	<5	<5	<5	<5
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	<5
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	<4
Acenaphthene	83-32-9	4	µg/kg	<4	<4	<4	<4	<4
Fluorene	86-73-7	4	µg/kg	<4	<4	<4	<4	<4
Phenanthrene	85-01-8	4	µg/kg	<4	<4	<4	<4	<4
Anthracene	120-12-7	4	µg/kg	<4	<4	<4	<4	<4
Fluoranthene	206-44-0	4	µg/kg	<4	<4	<4	<4	<4
Pyrene	129-00-0	4	µg/kg	<4	<4	<4	<4	<4
Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	<4	<4	<4
Chrysene	218-01-9	4	µg/kg	<4	<4	<4	<4	<4
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<4	<4	<4	<4	<4



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	<4	<4	<4
Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	<4	<4	<4
Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	<4	<4	<4
Perylene	198-55-0	4	µg/kg	<4	<4	<4	<4	<4
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	<4	<4	<4
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	<4	<4	<4
Indeno(1,2,3-cd)pyrene	193-39-5	4	µg/kg	<4	<4	<4	<4	<4
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	<5
^ Sum of PAHs	----	4	µg/kg	<4	<4	<4	<4	<4
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	<4	<4	<4	<4	<4
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	5	5	5	5	5
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	10	10	10	10	10
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0008	0.0006	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0045	0.0032	0.0019	0.0019	0.0013
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	0.002	0.001	<0.001	<0.001	<0.001



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0019	0.0013	0.0003	0.0003	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0020	0.0017	<0.0002	0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0041	0.0033	0.0003	0.0004	0.0004
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0060	0.0038	0.0006	0.0007	0.0008
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0034	0.0026	0.0009	0.0012	0.0011
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0036	0.0027	0.0012	0.0015	0.0012
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0023	0.0018	0.0006	0.0006	0.0008
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0008	0.0008	<0.0002	<0.0002	0.0004
Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	0.0314	0.0228	0.0058	0.0068	0.0060
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0053	0.0038	0.0019	0.0019	0.0013
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0213	0.0149	0.0031	0.0035	0.0025
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	96.3	96.5	85.6	94.6	99.8
2-Chlorophenol-D4	93951-73-6	0.5	%	95.4	96.5	96.6	93.1	91.3
2,4,6-Tribromophenol	118-79-6	0.5	%	86.3	75.7	76.3	68.4	74.3
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	95.9	91.6	91.0	87.9	92.3
Anthracene-d10	1719-06-8	0.5	%	99.3	97.6	106	96.2	100
4-Terphenyl-d14	1718-51-0	0.5	%	95.9	105	124	117	108
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	75.7	96.4	102	112	71.5
Toluene-D8	2037-26-5	0.2	%	90.2	87.7	94.7	102	83.4
4-Bromofluorobenzene	460-00-4	0.2	%	97.4	96.2	106	111	92.0
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	125	114	116	124	126
13C8-PFOA	----	0.0002	%	115	114	116	114	109
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	101	95.8	95.1	93.0	80.9
Anthracene-d10	1719-06-8	10	%	96.2	114	111	87.0	76.5



Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	NEC3a	NEC3b	NEC4a	NEC4b	NEC5a
Sampling date / time					[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]
Compound	CAS Number	LOR	Unit	EP2518235-041	EP2518235-042	EP2518235-043	EP2518235-044	EP2518235-045	
				Result	Result	Result	Result	Result	
EP132T: Base/Neutral Extractable Surrogates - SD - Continued									
4-Terphenyl-d14	1718-51-0	10	%	84.0	113	110	75.8	68.5	



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID				NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	47.8	46.2	43.4	26.3	49.8
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	12	10	6	13
Barium	7440-39-3	10	mg/kg	20	10	10	<10	10
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	60
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	41	31	21	53
Cobalt	7440-48-4	2	mg/kg	5	6	6	4	6
Copper	7440-50-8	5	mg/kg	9	11	9	6	14
Lead	7439-92-1	5	mg/kg	7	8	7	<5	<5
Manganese	7439-96-5	5	mg/kg	411	183	172	132	150
Nickel	7440-02-0	2	mg/kg	9	18	15	10	21
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	17	32	26	15	29
Zinc	7440-66-6	5	mg/kg	135	168	146	29	51
EG020-SD: Total Metals in Sediments by ICPMS								
Cadmium	7440-43-9	0.1	mg/kg	0.2	0.2	0.2	----	----
Chromium	7440-47-3	1.0	mg/kg	18.6	42.8	32.7	----	----
Copper	7440-50-8	1.0	mg/kg	8.0	10.5	9.0	----	----
Lead	7439-92-1	1.0	mg/kg	7.7	8.9	7.8	----	----
Nickel	7440-02-0	1.0	mg/kg	9.6	18.8	15.8	----	----
Zinc	7440-66-6	1.0	mg/kg	102	168	168	----	----
EG035E: 1M HCl extractable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	<0.01	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.01	mg/kg	0.13	0.15	0.13	----	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050
Result				Result	Result	Result	Result	Result
EG035T: Total Recoverable Mercury by FIMS - Continued								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	0.2	0.3
EG036: Methyl Mercury								
Methyl mercury	22967-92-6	0.10	mg/kg	<0.10	<0.10	<0.10	----	----
EP003: Total Organic Carbon (TOC) in Soil								
Total Organic Carbon	----	0.02	%	5.50	3.88	2.30	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	10	13	15	<3	4
>C16 - C34 Fraction	----	3	mg/kg	286	255	226	<3	100
>C34 - C40 Fraction	----	5	mg/kg	99	44	41	<5	22
>C10 - C40 Fraction (sum)	----	3	mg/kg	395	312	282	<3	126
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	10	13	15	<3	4
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	6	5	7	<3	<3



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050
Result				Result	Result	Result	Result	Result
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	3	mg/kg	86	113	104	<3	33
C29 - C36 Fraction	----	5	mg/kg	245	168	147	<5	80
^A C10 - C36 Fraction (sum)	----	3	mg/kg	337	286	258	<3	113
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^A Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^A Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP132B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	5	µg/kg	<5	<5	<5	<5	<5
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	<5
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	<4
Acenaphthene	83-32-9	4	µg/kg	<4	<4	<4	<4	<4
Fluorene	86-73-7	4	µg/kg	<4	<4	<4	<4	<4
Phenanthrene	85-01-8	4	µg/kg	<4	<4	<4	<4	<4
Anthracene	120-12-7	4	µg/kg	<4	<4	<4	<4	<4
Fluoranthene	206-44-0	4	µg/kg	<4	<4	<4	<4	<4
Pyrene	129-00-0	4	µg/kg	<4	<4	<4	<4	<4
Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	<4	<4	<4



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050
				Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued								
Chrysene	218-01-9	4	µg/kg	<4	<4	<4	<4	<4
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<4	<4	<4	<4	<4
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	<4	<4	<4
Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	<4	<4	<4
Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	<4	<4	<4
Perylene	198-55-0	4	µg/kg	<4	<4	<4	<4	<4
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	<4	<4	<4
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	<4	<4	<4
Indeno(1,2,3-cd)pyrene	193-39-5	4	µg/kg	<4	<4	<4	<4	<4
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	<5
^ Sum of PAHs	----	4	µg/kg	<4	<4	<4	<4	<4
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	<4	<4	<4	<4	<4
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	5	5	5	5	5
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	10	10	10	10	10
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0019	0.0006	0.0008	<0.0002	0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050
				Result	Result	Result	Result	Result

EP231B: Perfluoroalkyl Carboxylic Acids

Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0004	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0009	<0.0002	<0.0002	0.0003	0.0003
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0014	0.0003	0.0004	0.0003	0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0018	0.0005	0.0007	<0.0002	0.0004
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0013	0.0002	0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

EP231C: Perfluoroalkyl Sulfonamides

Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

EP231D: (n:2) Fluorotelomer Sulfonic Acids



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time				[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050
Result				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	0.0082	0.0016	0.0021	0.0006	0.0014
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0019	0.0006	0.0008	<0.0002	0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0032	0.0006	0.0008	0.0003	0.0005
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	98.4	102	96.8	91.6	106
2-Chlorophenol-D4	93951-73-6	0.5	%	97.3	102	95.7	91.4	96.3
2,4,6-Tribromophenol	118-79-6	0.5	%	78.8	81.9	73.4	66.4	79.0
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	90.6	87.7	91.2	90.4	99.2
Anthracene-d10	1719-06-8	0.5	%	96.5	104	99.8	93.9	110
4-Terphenyl-d14	1718-51-0	0.5	%	111	112	108	116	108
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	93.0	89.7	96.1	108	97.6
Toluene-D8	2037-26-5	0.2	%	80.6	85.8	91.6	97.5	91.0
4-Bromofluorobenzene	460-00-4	0.2	%	92.6	96.8	100	109	103
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	117	120	120	110	93.5
13C8-PFOA	----	0.0002	%	120	114	116	112	118
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	97.5	87.3	86.9	124	112



Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	NEC5b	NEC6a	NEC6b	SS01	SS02
Sampling date / time					[24-Oct-2025]	[24-Oct-2025]	[24-Oct-2025]	29-Oct-2025 00:00	29-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-046	EP2518235-047	EP2518235-048	EP2518235-049	EP2518235-050	
				Result	Result	Result	Result	Result	
EP132T: Base/Neutral Extractable Surrogates - SD - Continued									
Anthracene-d10	1719-06-8	10	%	86.0	79.7	82.5	129	119	
4-Terphenyl-d14	1718-51-0	10	%	76.7	72.4	74.7	135	124	



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				SS03	SS04	SS05	SS09	SS10
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	28-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-051	EP2518235-052	EP2518235-053	EP2518235-054	EP2518235-055
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	63.2	53.1	61.1	<1.0	85.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	22	16	17	<5	<5
Barium	7440-39-3	10	mg/kg	20	10	10	50	130
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<2
Boron	7440-42-8	50	mg/kg	100	70	60	70	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	1
Chromium	7440-47-3	2	mg/kg	88	54	59	25	35
Cobalt	7440-48-4	2	mg/kg	8	6	6	5	9
Copper	7440-50-8	5	mg/kg	22	15	15	9	39
Lead	7439-92-1	5	mg/kg	7	7	6	6	25
Manganese	7439-96-5	5	mg/kg	228	141	205	260	375
Nickel	7440-02-0	2	mg/kg	32	20	22	11	22
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	46	31	31	19	32
Zinc	7440-66-6	5	mg/kg	79	56	69	35	2120
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.8	0.3	0.2	<0.1	2.2
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.6
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.6
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				SS03	SS04	SS05	SS09	SS10
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	28-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-051	EP2518235-052	EP2518235-053	EP2518235-054	EP2518235-055
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.6
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.6
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	7	3	6	<3	32
>C16 - C34 Fraction	----	3	mg/kg	119	155	165	22	476
>C34 - C40 Fraction	----	5	mg/kg	25	31	33	11	160
>C10 - C40 Fraction (sum)	----	3	mg/kg	151	189	204	33	668
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	7	3	6	<3	32
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	<3	<3	<3
C10 - C14 Fraction	----	3	mg/kg	5	4	6	<3	30
C15 - C28 Fraction	----	3	mg/kg	34	40	75	7	197
C29 - C36 Fraction	----	5	mg/kg	99	134	104	20	361
^ C10 - C36 Fraction (sum)	----	3	mg/kg	138	178	185	27	588
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	<3	<3	<3
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	SS03	SS04	SS05	SS09	SS10
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	28-Oct-2025 00:00	
Compound	CAS Number	LOR	Unit	EP2518235-051	EP2518235-052	EP2518235-053	EP2518235-054	EP2518235-055	
				Result	Result	Result	Result	Result	
EP080-SD: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
EP132B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	5	µg/kg	<5	<5	7	<5	<10	
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	<5	<5	<5	
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	<4	<4	<4	
Acenaphthene	83-32-9	4	µg/kg	<4	<4	<4	<4	<4	
Fluorene	86-73-7	4	µg/kg	<4	<4	<4	<4	<6	
Phenanthrene	85-01-8	4	µg/kg	<4	<4	<4	<4	<4	
Anthracene	120-12-7	4	µg/kg	<4	<4	<4	<4	<4	
Fluoranthene	206-44-0	4	µg/kg	<4	<4	<4	<4	<22	
Pyrene	129-00-0	4	µg/kg	<4	<4	<4	<4	<16	
Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	<4	<4	<6	
Chrysene	218-01-9	4	µg/kg	<4	<4	<4	<4	<6	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<4	<4	<4	<4	<10	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	<4	<4	<4	
Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	<4	<4	<4	
Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	<4	<4	<6	
Perylene	198-55-0	4	µg/kg	<4	<4	<4	<4	<24	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	<4	<4	<6	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	<4	<4	<4	
Indeno(1,2,3.cd)pyrene	193-39-5	4	µg/kg	<4	<4	<4	<4	<4	
Coronene	191-07-1	5	µg/kg	<5	<5	<5	<5	<5	
^ Sum of PAHs	----	4	µg/kg	<5	<4	7	<4	<11	
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	<5	<4	<4	<4	<11	
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	5	5	5	5	<11	
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	10	10	10	10	<11	

Sub-Matrix: **SEDIMENT**
(Matrix: **SOIL**)

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Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				SS03	SS04	SS05	SS09	SS10
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	28-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-051	EP2518235-052	EP2518235-053	EP2518235-054	EP2518235-055
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	0.0028
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	0.0007
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	0.0016	0.0019	0.0018	0.133	0.0194
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0003	0.0003	0.0004	0.0213	0.0033
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0006	0.0010	0.0008	0.127	0.0101
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	102	100	94.1	98.6	93.9
2-Chlorophenol-D4	93951-73-6	0.5	%	91.6	99.4	82.4	96.2	95.0
2,4,6-Tribromophenol	118-79-6	0.5	%	84.1	71.4	67.5	22.9	69.7



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				SS03	SS04	SS05	SS09	SS10
Sampling date / time				29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	29-Oct-2025 00:00	28-Oct-2025 00:00
Compound	CAS Number	LOR	Unit	EP2518235-051	EP2518235-052	EP2518235-053	EP2518235-054	EP2518235-055
				Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	93.6	93.5	88.0	94.7	83.5
Anthracene-d10	1719-06-8	0.5	%	112	106	95.7	109	107
4-Terphenyl-d14	1718-51-0	0.5	%	122	107	117	119	106
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	94.3	85.4	77.5	117	81.1
Toluene-D8	2037-26-5	0.2	%	86.2	75.8	72.7	120	71.1
4-Bromofluorobenzene	460-00-4	0.2	%	95.9	97.7	81.1	130	81.4
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	93.0	90.0	106	95.0	90.0
13C8-PFOA	----	0.0002	%	112	100	114	114	110
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	92.0	91.1	94.7	91.6	81.4
Anthracene-d10	1719-06-8	10	%	84.6	89.2	109	93.9	119
4-Terphenyl-d14	1718-51-0	10	%	76.4	76.1	108	78.0	120



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

				Sample ID	SS11	SS12	----	----	----
Sampling date / time					28-Oct-2025 00:00	26-Oct-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EP2518235-056	EP2518235-057	-----	-----	-----
				Result	Result		----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		60.9	25.6	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	----	----	----
Barium	7440-39-3	10	mg/kg		70	10	----	----	----
Beryllium	7440-41-7	1	mg/kg		<1	<1	----	----	----
Boron	7440-42-8	50	mg/kg		<50	<50	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		30	11	----	----	----
Cobalt	7440-48-4	2	mg/kg		6	<2	----	----	----
Copper	7440-50-8	5	mg/kg		29	<5	----	----	----
Lead	7439-92-1	5	mg/kg		16	<5	----	----	----
Manganese	7439-96-5	5	mg/kg		223	56	----	----	----
Nickel	7440-02-0	2	mg/kg		17	4	----	----	----
Selenium	7782-49-2	5	mg/kg		<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg		21	9	----	----	----
Zinc	7440-66-6	5	mg/kg		1930	34	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		1.2	<0.1	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	----	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	----	----	----

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				SS11	SS12	----	----	----
Sampling date / time				28-Oct-2025 00:00	26-Oct-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EP2518235-056	EP2518235-057	-----	-----	-----
Result				Result	Result	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued								
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	3	mg/kg	55	<3	----	----	----
>C16 - C34 Fraction	----	3	mg/kg	1630	6	----	----	----
>C34 - C40 Fraction	----	5	mg/kg	613	<5	----	----	----
>C10 - C40 Fraction (sum)	----	3	mg/kg	2300	6	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	3	mg/kg	55	<3	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	3	mg/kg	<3	<3	----	----	----
C10 - C14 Fraction	----	3	mg/kg	41	<3	----	----	----
C15 - C28 Fraction	----	3	mg/kg	514	<3	----	----	----
C29 - C36 Fraction	----	5	mg/kg	1410	8	----	----	----
^ C10 - C36 Fraction (sum)	----	3	mg/kg	1960	8	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons								
C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	3.0	mg/kg	<3.0	<3.0	----	----	----
EP080-SD: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	----	----	----
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	SS11	SS12	----	----	----
Sampling date / time				28-Oct-2025 00:00	26-Oct-2025 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EP2518235-056	EP2518235-057	-----	-----	-----	
				Result	Result	----	----	----	
EP080-SD: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----	
Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	----	----	----	
EP132B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	5	µg/kg	<8	<5	----	----	----	
2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	----	----	----	
Acenaphthylene	208-96-8	4	µg/kg	<4	<4	----	----	----	
Acenaphthene	83-32-9	4	µg/kg	<4	<4	----	----	----	
Fluorene	86-73-7	4	µg/kg	<10	<4	----	----	----	
Phenanthrene	85-01-8	4	µg/kg	<10	<4	----	----	----	
Anthracene	120-12-7	4	µg/kg	<10	<4	----	----	----	
Fluoranthene	206-44-0	4	µg/kg	<28	<4	----	----	----	
Pyrene	129-00-0	4	µg/kg	<26	<4	----	----	----	
Benz(a)anthracene	56-55-3	4	µg/kg	<16	<4	----	----	----	
Chrysene	218-01-9	4	µg/kg	<28	<4	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	µg/kg	<28	<4	----	----	----	
Benzo(k)fluoranthene	207-08-9	4	µg/kg	<20	<4	----	----	----	
Benzo(e)pyrene	192-97-2	4	µg/kg	<8	<4	----	----	----	
Benzo(a)pyrene	50-32-8	4	µg/kg	<17	<4	----	----	----	
Perylene	198-55-0	4	µg/kg	<8	<4	----	----	----	
Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	----	----	----	
Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<16	<4	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	<20	<4	----	----	----	
Coronene	191-07-1	5	µg/kg	<5	<5	----	----	----	
^ Sum of PAHs	----	4	µg/kg	<4	<4	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	4	µg/kg	<4	<4	----	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	4	µg/kg	5	5	----	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	4	µg/kg	10	10	----	----	----	



Analytical Results

Sub-Matrix: SEDIMENT
 (Matrix: SOIL)

Sample ID

				SS11	SS12	----	----	----
Sampling date / time				28-Oct-2025 00:00	26-Oct-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EP2518235-056	EP2518235-057	-----	-----	-----
				Result	Result	----	----	----

EP231A: Perfluoroalkyl Sulfonic Acids

Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0012	<0.0002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----

EP231B: Perfluoroalkyl Carboxylic Acids

Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0003	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0008	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0011	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0012	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0015	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0006	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0004	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTeDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	----	----	----

EP231C: Perfluoroalkyl Sulfonamides



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	SS11	SS12	----	----	----
Sampling date / time				28-Oct-2025 00:00	26-Oct-2025 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EP2518235-056	EP2518235-057	-----	-----	-----	
				Result	Result	----	----	----	
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----	
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	----	----	----	
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg	0.0073	<0.0002	----	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0012	<0.0002	----	----	----	
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0036	<0.0002	----	----	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	101	101	----	----	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	101	99.5	----	----	----	
2,4,6-Tribromophenol	118-79-6	0.5	%	84.3	70.9	----	----	----	

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Analytical Results

Sub-Matrix: **SEDIMENT**
 (Matrix: **SOIL**)

Sample ID

				SS11	SS12	----	----	----
Sampling date / time				28-Oct-2025 00:00	26-Oct-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EP2518235-056	EP2518235-057	-----	-----	-----
				Result	Result	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	87.5	94.1	----	----	----
Anthracene-d10	1719-06-8	0.5	%	105	104	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	113	112	----	----	----
EP080-SD: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	72.8	101	----	----	----
Toluene-D8	2037-26-5	0.2	%	78.9	90.6	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	87.4	101	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	103	106	----	----	----
13C8-PFOA	----	0.0002	%	114	114	----	----	----
EP132T: Base/Neutral Extractable Surrogates - SD								
2-Fluorobiphenyl	321-60-8	10	%	106	102	----	----	----
Anthracene-d10	1719-06-8	10	%	123	95.5	----	----	----
4-Terphenyl-d14	1718-51-0	10	%	144	82.9	----	----	----



Surrogate Control Limits

Sub-Matrix: MARINE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	67
2-Chlorophenol-D4	93951-73-6	29	120
2,4,6-Tribromophenol	118-79-6	10	131
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	131
Anthracene-d10	1719-06-8	43	126
4-Terphenyl-d14	1718-51-0	41	142
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	61	141
Toluene-D8	2037-26-5	73	126
4-Bromofluorobenzene	460-00-4	60	125
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	57	119
2-Chlorophenol-D4	93951-73-6	52	130
2,4,6-Tribromophenol	118-79-6	40	132
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	53	139
Anthracene-d10	1719-06-8	68	124
4-Terphenyl-d14	1718-51-0	66	132
EP080-SD: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130
EP132T: Base/Neutral Extractable Surrogates - SD			
2-Fluorobiphenyl	321-60-8	45	125
Anthracene-d10	1719-06-8	34	151
4-Terphenyl-d14	1718-51-0	10	145
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

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Client : WA MARINE PTY LTD
Project : 25ENV445



Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry / Biology).

(SOIL) EP003: Total Organic Carbon (TOC) in Soil

(SOIL) ED042T: Total Sulfur by LECO

(SOIL) EG035E: 1M HCl extractable Mercury by FIMS

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry / Biology).

(SOIL) EP262: Ethanolamines

(SOIL) EG036: Methyl Mercury



QUALITY CONTROL REPORT

Work Order : **EP2518235**

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Amendment : **1**

Client : **WA MARINE PTY LTD**
 Contact : Sam Billingham
 Address : SUITE 5, 5/18 GRIFFON DRIVE PO BOX 1370
 DUNSBOROUGH, PERTH WA, AUSTRALIA 6281
 Telephone : 0433 283 013
 Project : 25ENV445
 Order number : ---
 C-O-C number : ---
 Sampler : Eve Challander, Sam Billingham
 Site : ChEMMS
 Quote number : EP23O2MARI0007_V5
 No. of samples received : 70
 No. of samples analysed : 70

Laboratory : Environmental Division Perth
 Contact : Madison Forster
 Address : 26 Rigali Way Wangara WA Australia 6065
 Telephone : +61-8-9406 1301
 Date Samples Received : 30-Oct-2025
 Date Analysis Commenced : 04-Nov-2025
 Issue Date : 24-Nov-2025



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Beatriz Llarinas	Senior Chemist	Brisbane Inorganics, Stafford, QLD
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, WA
Chris Lemaitre	Perth - State Manager	Perth Inorganics, Wangara, WA
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, WA
Efua Wilson	Metals Chemist	Perth Inorganics, Wangara, WA
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
John Horwood	Organic Supervisor	Perth Organics, Wangara, WA
Niamh Carthew	Inorganic Chemist	Perth Inorganics, Wangara, WA
Satishkumar Trivedi	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

RPD = Relative Percentage Difference

= Indicates failed QC

* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6980761)									
EP2518235-028	NNB	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<10	10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	11	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	15	15	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	82	79	3.1	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	10	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	10	10	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6980775)									
EP2518235-038	NEC1b	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	2	2	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	60	60	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	23	25	9.5	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	6	6	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	12	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6980775) - continued											
EP2518235-038	NEC1b	EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Copper	7440-50-8	5	mg/kg	12	15	20.8	No Limit		
		EG005T: Lead	7439-92-1	5	mg/kg	9	10	0.0	No Limit		
		EG005T: Manganese	7439-96-5	5	mg/kg	420	400	4.9	0% - 20%		
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Vanadium	7440-62-2	5	mg/kg	21	21	0.0	No Limit		
		EG005T: Zinc	7440-66-6	5	mg/kg	317	288	9.8	0% - 20%		
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
EP2518235-048	NEC6b	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit		
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit		
		EG005T: Barium	7440-39-3	10	mg/kg	10	10	0.0	No Limit		
		EG005T: Chromium	7440-47-3	2	mg/kg	31	29	5.0	0% - 50%		
		EG005T: Cobalt	7440-48-4	2	mg/kg	6	6	0.0	No Limit		
		EG005T: Nickel	7440-02-0	2	mg/kg	15	14	0.0	No Limit		
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	10	0.0	No Limit		
		EG005T: Copper	7440-50-8	5	mg/kg	9	9	0.0	No Limit		
		EG005T: Lead	7439-92-1	5	mg/kg	7	6	0.0	No Limit		
		EG005T: Manganese	7439-96-5	5	mg/kg	172	150	13.6	0% - 20%		
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Vanadium	7440-62-2	5	mg/kg	26	25	0.0	No Limit		
		EG005T: Zinc	7440-66-6	5	mg/kg	146	141	3.4	0% - 20%		
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
		EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 6980747)									
		EP2518235-006	CH5	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.04	121	No Limit
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 6980759)											
EP2518235-018	DO4	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	0.01	<0.01	0.0	No Limit		
EP2518235-028	NNB	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit		
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 6980773)											
EP2518235-038	NEC1b	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	0.22	0.19	14.6	0% - 20%		
EP2518235-048	NEC6b	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	0.13	0.15	12.0	0% - 50%		
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6980960)											
EP2518235-001	CH1	EA055: Moisture Content	----	0.1 (1.0)*	%	30.0	29.1	3.2	0% - 20%		
EP2518235-011	SB2	EA055: Moisture Content	----	0.1 (1.0)*	%	33.0	32.6	1.4	0% - 20%		
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6980961)											
EP2518235-021	DO6	EA055: Moisture Content	----	0.1 (1.0)*	%	35.1	36.7	4.6	0% - 20%		
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6980982)											
EP2518235-029	NNBD	EA055: Moisture Content	----	0.1 (1.0)*	%	23.3	19.1	19.8	0% - 20%		

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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6980982) - continued									
EP2518235-039	NEC2a	EA055: Moisture Content	----	0.1 (1.0)*	%	33.4	29.9	11.1	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6980983)									
EP2518235-049	SS01	EA055: Moisture Content	----	0.1 (1.0)*	%	26.3	26.5	1.0	0% - 20%
ED040T : Total Sulfate by ICPAES (QC Lot: 6980843)									
EP2518235-010	SB1a	ED040T: Sulfate as SO4 2-	14808-79-8	100	mg/kg	6450	6720	4.1	0% - 20%
EP2518235-023	DO7a	ED040T: Sulfate as SO4 2-	14808-79-8	100	mg/kg	6400	5860	8.8	0% - 20%
ED040T : Total Sulfate by ICPAES (QC Lot: 6980844)									
EP2518235-035	SCB	ED040T: Sulfate as SO4 2-	14808-79-8	100	mg/kg	3460	3740	7.8	0% - 20%
ED042T: Total Sulfur by LECO (QC Lot: 6987499)									
EP2518235-010	SB1a	ED042T: Sulfur - Total as S (LECO)	----	0.01	%	0.35	0.34	4.8	0% - 20%
EP2518235-025	HC	ED042T: Sulfur - Total as S (LECO)	----	0.01	%	0.30	0.30	0.0	0% - 20%
ED042T: Total Sulfur by LECO (QC Lot: 6987501)									
EP2518235-035	SCB	ED042T: Sulfur - Total as S (LECO)	----	0.01	%	0.12	0.13	0.0	0% - 50%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 6980746)									
EP2518235-001	CH1	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Chromium	7440-47-3	1	mg/kg	20.0	22.1	9.9	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	4.3	5.2	20.7	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.4	3.5	3.7	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	6.7	7.5	11.6	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	14.6	15.0	3.3	0% - 50%
EP2518235-006	CH5	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Chromium	7440-47-3	1	mg/kg	12.4	11.5	7.6	0% - 50%
		EG020-SD: Copper	7440-50-8	1	mg/kg	2.0	2.0	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	2.1	2.0	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	3.9	3.7	5.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	10.2	9.2	9.9	0% - 50%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 6980758)									
EP2518235-018	DO4	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Chromium	7440-47-3	1	mg/kg	40.7	44.1	8.1	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	7.6	8.5	11.6	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	3.7	4.0	6.5	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	15.2	16.8	9.8	0% - 50%
		EG020-SD: Zinc	7440-66-6	1	mg/kg	25.2	23.9	5.4	0% - 20%
EP2518235-028	NNB	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Chromium	7440-47-3	1	mg/kg	13.4	13.3	0.8	0% - 50%
		EG020-SD: Copper	7440-50-8	1	mg/kg	1.4	1.4	0.0	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	2.3	2.2	0.0	No Limit

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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 6980758) - continued									
EP2518235-028	NNB	EG020-SD: Nickel	7440-02-0	1	mg/kg	4.5	4.5	0.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	12.2	12.4	1.5	0% - 50%
EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 6980772)									
EP2518235-038	NEC1b	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	2.0	2.3	13.7	0% - 20%
		EG020-SD: Zinc	7440-66-6	1	mg/kg	296	328	10.2	0% - 20%
EP2518235-048	NEC6b	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	0.2	0.2	0.0	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	168	144	15.7	0% - 20%
EP2518235-038	NEC1b	EG020-SD: Chromium	7440-47-3	1	mg/kg	25.1	26.9	7.0	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	11.4	13.6	17.6	0% - 50%
		EG020-SD: Lead	7439-92-1	1	mg/kg	9.9	10.1	2.4	0% - 50%
		EG020-SD: Nickel	7440-02-0	1	mg/kg	13.1	13.1	0.0	0% - 50%
EP2518235-048	NEC6b	EG020-SD: Chromium	7440-47-3	1	mg/kg	32.7	31.1	4.8	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	9.0	8.7	3.2	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	7.8	7.5	4.6	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	15.8	15.1	4.3	0% - 50%
EG035E: 1M HCl extractable Mercury by FIMS (QC Lot: 6981660)									
EP2518235-025	HC	EG035E: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EP2518235-035	SCB	EG035E: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EG035E: 1M HCl extractable Mercury by FIMS (QC Lot: 6986731)									
EP2518235-045	NEC5a	EG035E: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6980774)									
EP2518235-038	NEC1b	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
EP2518235-048	NEC6b	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	0.0	No Limit
EG036: Methyl Mercury (QC Lot: 6991735)									
EB2537278-001	Anonymous	EG036: Methyl mercury	22967-92-6	0.1	mg/kg	<0.10	<0.10	0.0	No Limit
EB2537278-001	Anonymous	EG036: Methyl mercury	22967-92-6	0.1	mg/kg	<0.10	<0.10	0.0	No Limit
EP2518235-044	NEC4b	EG036: Methyl mercury	22967-92-6	0.1	mg/kg	<0.10	<0.10	0.0	No Limit
EP2518235-044	NEC4b	EG036: Methyl mercury	22967-92-6	0.1	mg/kg	<0.10	<0.10	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6979961)									
EP2518235-028	NNB	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP2518283-008	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6980861)									
EP2518012-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	280	240	13.1	0% - 50%
EP2518235-028	NNB	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	240	200	14.5	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6980862)									
EP2518235-028	NNB	EK067G: Total Phosphorus as P	----	2	mg/kg	338	329	2.5	0% - 20%

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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 6987498)									
EP2518235-001	CH1	EP003: Total Organic Carbon	----	0.02	%	0.18	0.19	0.0	No Limit
EP2518235-016	DO1	EP003: Total Organic Carbon	----	0.02	%	0.35	0.35	0.0	0% - 50%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 6987500)									
EP2518235-027	CZ	EP003: Total Organic Carbon	----	0.02	%	0.85	0.76	10.7	0% - 20%
EP2518235-037	NEC1a	EP003: Total Organic Carbon	----	0.02	%	4.93	4.95	0.4	0% - 20%
EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 6987502)									
EP2518235-047	NEC6a	EP003: Total Organic Carbon	----	0.02	%	3.88	3.86	0.6	0% - 20%
EP075(SIM)A: Phenolic Compounds (QC Lot: 6977094)									
EP2518235-039	NEC2a	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP2518235-049	SS01	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 6979792)									
EP2518262-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.7	<0.5	33.3	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 6979792) - continued									
EP2518262-001	Anonymous	EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.9	<0.5	57.1	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<2	<1	66.7	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6977068)									
EP2518235-001	CH1	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	0% - 3%
EP2518235-016	DO1	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	0% - 3%
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6977069)									
EP2518235-001	CH1	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP2518235-016	DO1	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	4	4	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	17	14	19.4	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	13	10	27.3	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6977085)									
EP2518235-039	NEC2a	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	4	3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	24	22	7.4	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	69	# 56	20.8	0% - 20%
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	41	31	26.9	No Limit
EP2518235-049	SS01	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6977090)									
EP2518235-039	NEC2a	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	0% - 3%
EP2518235-049	SS01	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	0% - 3%
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6977100)									
EP2518235-027	CZ	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	0% - 3%
EP2518235-037	NEC1a	EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	<3	0.0	0% - 3%
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6979809)									
EP2518235-027	CZ	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 6979809) - continued									
EP2518235-027	CZ	EP071-SD: C15 - C28 Fraction	----	3	mg/kg	4	<3	0.0	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	21	16	27.0	No Limit
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	17	16	0.0	No Limit
EP2518235-037	NEC1a	EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	9	95.7	No Limit
		EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	46	50	8.3	0% - 50%
		EP071-SD: C29 - C36 Fraction	----	5	mg/kg	46	41	12.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6977068)									
EP2518235-001	CH1	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	0% - 3%
EP2518235-016	DO1	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	0% - 3%
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6977069)									
EP2518235-001	CH1	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP2518235-016	DO1	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	13	10	23.4	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	23	18	24.4	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	10	8	27.2	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6977085)									
EP2518235-039	NEC2a	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	6	<3	58.9	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	56	46	19.7	0% - 50%
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	77	# 59	26.5	0% - 20%
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	15	13	9.6	No Limit
EP2518235-049	SS01	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6977090)									
EP2518235-039	NEC2a	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	0% - 3%
EP2518235-049	SS01	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	0% - 3%
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6977100)									
EP2518235-027	CZ	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	0% - 3%
EP2518235-037	NEC1a	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	0% - 3%
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6979809)									
EP2518235-027	CZ	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	19	15	25.7	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 6979809) - continued									
EP2518235-027	CZ	EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	19	15	23.5	No Limit
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	<5	0.0	No Limit
EP2518235-037	NEC1a	EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	38	41	5.8	0% - 50%
		EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	59	60	1.7	0% - 20%
		EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	21	19	11.4	No Limit
EP080-SD: BTEXN (QC Lot: 6977068)									
EP2518235-001	CH1	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Total Xylenes	----	0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	0% - .2%
		EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
EP2518235-016	DO1	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Total Xylenes	----	0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	0% - .2%
		EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
EP080-SD: BTEXN (QC Lot: 6977090)									
EP2518235-039	NEC2a	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Total Xylenes	----	0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	0% - .2%
		EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
EP2518235-049	SS01	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080-SD: BTEXN (QC Lot: 6977090) - continued									
EP2518235-049	SS01	EP080-SD: meta- & para-Xylene	108-38-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		106-42-3							
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Total Xylenes	----	0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	0% - .2%
		EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
EP080-SD: BTEXN (QC Lot: 6977100)									
EP2518235-027	CZ	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: meta- & para-Xylene	108-38-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		106-42-3							
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Total Xylenes	----	0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	0% - .2%
		EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
EP2518235-037	NEC1a	EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: meta- & para-Xylene	108-38-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		106-42-3							
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Total Xylenes	----	0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	0% - .2%
		EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	0% - .2%
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6977070)									
EP2518235-001	CH1	EP132B-SD: Acenaphthylene	208-96-8	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Acenaphthene	83-32-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Fluorene	86-73-7	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Phenanthrene	85-01-8	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Anthracene	120-12-7	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Fluoranthene	206-44-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Pyrene	129-00-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Chrysene	218-01-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	4	µg/kg	<4	<4	0.0	No Limit
		205-82-3							
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6977070) - continued											
EP2518235-001	CH1	EP132B-SD: Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Perylene	198-55-0	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Sum of PAHs	----	4	µg/kg	7	<4	54.5	No Limit		
		EP132B-SD: Naphthalene	91-20-3	5	µg/kg	7	<5	27.0	No Limit		
		EP132B-SD: 2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	0.0	No Limit		
		EP132B-SD: Coronene	191-07-1	5	µg/kg	<5	<5	0.0	No Limit		
EP2518235-013	SB4	EP132B-SD: Acenaphthylene	208-96-8	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Acenaphthene	83-32-9	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Fluorene	86-73-7	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Phenanthrene	85-01-8	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Anthracene	120-12-7	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Fluoranthene	206-44-0	4	µg/kg	6	6	0.0	No Limit		
		EP132B-SD: Pyrene	129-00-0	4	µg/kg	6	5	0.0	No Limit		
		EP132B-SD: Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Chrysene	218-01-9	4	µg/kg	<4	5	0.0	No Limit		
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	4	µg/kg	6	5	0.0	No Limit		
			205-82-3								
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Benzo(a)pyrene	50-32-8	4	µg/kg	<4	5	0.0	No Limit		
		EP132B-SD: Perylene	198-55-0	4	µg/kg	<4	<4	0.0	No Limit		
		EP132B-SD: Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	8	69.5	No Limit		
		EP132B-SD: Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	7	54.1	No Limit		
		EP132B-SD: Indeno(1.2.3.cd)pyrene	193-39-5	4	µg/kg	<4	5	28.1	No Limit		
		EP132B-SD: Sum of PAHs	----	4	µg/kg	18	# 46	87.5	0% - 50%		
		EP132B-SD: Naphthalene	91-20-3	5	µg/kg	<5	<5	0.0	No Limit		
		EP132B-SD: 2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	0.0	No Limit		
		EP132B-SD: Coronene	191-07-1	5	µg/kg	<5	<5	0.0	No Limit		
		EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6977074)									
		EP2518235-039	NEC2a	EP132B-SD: Acenaphthylene	208-96-8	4	µg/kg	<4	<4	0.0	No Limit
EP132B-SD: Acenaphthene	83-32-9			4	µg/kg	<4	<4	0.0	No Limit		
EP132B-SD: Fluorene	86-73-7			4	µg/kg	<4	<4	0.0	No Limit		
EP132B-SD: Phenanthrene	85-01-8			4	µg/kg	<4	<4	0.0	No Limit		
EP132B-SD: Anthracene	120-12-7			4	µg/kg	<4	<4	0.0	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6977074) - continued									
EP2518235-039	NEC2a	EP132B-SD: Fluoranthene	206-44-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Pyrene	129-00-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Chrysene	218-01-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	4	µg/kg	<4	<4	0.0	No Limit
			205-82-3						
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Perylene	198-55-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Indeno(1,2,3-cd)pyrene	193-39-5	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Sum of PAHs	----	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Naphthalene	91-20-3	5	µg/kg	<5	<5	0.0	No Limit
		EP132B-SD: 2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	0.0	No Limit
EP2518235-049	SS01	EP132B-SD: Coronene	191-07-1	5	µg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Acenaphthylene	208-96-8	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Acenaphthene	83-32-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Fluorene	86-73-7	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Phenanthrene	85-01-8	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Anthracene	120-12-7	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Fluoranthene	206-44-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Pyrene	129-00-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benz(a)anthracene	56-55-3	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Chrysene	218-01-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	4	µg/kg	<4	<4	0.0	No Limit
			205-82-3						
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(e)pyrene	192-97-2	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(a)pyrene	50-32-8	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Perylene	198-55-0	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(g,h,i)perylene	191-24-2	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Dibenz(a,h)anthracene	53-70-3	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Indeno(1,2,3-cd)pyrene	193-39-5	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Sum of PAHs	----	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Naphthalene	91-20-3	5	µg/kg	<5	<5	0.0	No Limit
		EP132B-SD: 2-Methylnaphthalene	91-57-6	5	µg/kg	<5	<5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6977074) - continued									
EP2518235-049	SS01	EP132B-SD: Coronene	191-07-1	5	µg/kg	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6976873)									
EP2518242-018	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP2518242-019	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6976874)									
EP2518235-050	SS02	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6976873)									
EP2518242-018	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6976873) - continued									
EP2518242-018	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP2518242-019	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6976874)									
EP2518235-050	SS02	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6976873)									
EP2518242-018	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6976873) - continued									
EP2518242-018	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP2518242-019	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6976874)							
EP2518235-050	SS02	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6976873)									
EP2518242-018	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP2518242-019	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6976873) - continued									
EP2518242-019	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6976874)									
EP2518235-050	SS02	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6976873)									
EP2518242-018	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0002	0.0003	40.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0002	0.0003	40.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0002	0.0003	40.0	No Limit
EP2518242-019	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6976874)									
EP2518235-050	SS02	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0014	0.0013	7.4	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 6978591)									
EP2517934-027	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	9	9	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	9	9	0.0	No Limit
EP2518270-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	178	183	2.4	0% - 20%

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
ED037P: Alkalinity by PC Titrator (QC Lot: 6978591) - continued									
EP2518270-002	Anonymous	ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	178	183	2.4	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 6987821)									
EP2518235-058	SW01	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3010	2960	1.5	0% - 20%
EP2518235-068	NNBD	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2140	2170	1.2	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 6987822)									
EP2518235-058	SW01	ED045G: Chloride	16887-00-6	1	mg/L	21300	21300	0.3	0% - 20%
EP2518235-068	NNBD	ED045G: Chloride	16887-00-6	1	mg/L	16100	16100	0.4	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 6987484)									
EP2518235-058	SW01	ED093F: Calcium	7440-70-2	1	mg/L	513	505	1.7	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	1350	1330	1.9	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	11600	11400	1.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	411	405	1.4	0% - 20%
EP2518235-068	NNBD	ED093F: Calcium	7440-70-2	1	mg/L	396	383	3.5	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	967	958	0.9	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	8360	8400	0.4	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	308	309	0.4	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6987485)									
EP2518235-058	SW01	EG020A-F: Chromium	7440-47-3	0.001 (0.005) *	mg/L	<0.005	<0.005	0.0	No Limit
EP2518235-068	NNBD	EG020A-F: Chromium	7440-47-3	0.001 (0.005) *	mg/L	<0.005	<0.005	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 7019572)									
EP2518235-058	SW01	EG035F-LL: Mercury	7439-97-6	0.00004	mg/L	<0.00004	<0.00004	0.0	No Limit
EP2518235-068	NNBD	EG035F-LL: Mercury	7439-97-6	0.00004	mg/L	<0.00004	<0.00004	0.0	No Limit
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level (QC Lot: 6990777)									
EP2518235-058	SW01	EG050G: Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EP2518397-060	Anonymous	EG050G: Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level (QC Lot: 6990794)									
EP2518235-065	SW12	EG050G: Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EP2518473-002	Anonymous	EG050G: Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 6976518)									
EP2518013-001	Anonymous	EG093A-F: Beryllium	7440-41-7	0.1	µg/L	<0.0001 mg/L	<0.1	0.0	No Limit
		EG093A-F: Molybdenum	7439-98-7	0.1	µg/L	0.0104 mg/L	10.6	1.6	0% - 20%
		EG093A-F: Silver	7440-22-4	0.1	µg/L	<0.0001 mg/L	<0.1	0.0	No Limit
		EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.0002 mg/L	<0.2	0.0	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.0002 mg/L	0.2	0.0	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.0002 mg/L	<0.2	0.0	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 6976518) - continued											
EP2518013-001	Anonymous	EG093A-F: Antimony	7440-36-0	0.5	µg/L	<0.0005 mg/L	<0.5	0.0	No Limit		
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	0.0013 mg/L	1.3	0.0	No Limit		
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.0005 mg/L	<0.5	0.0	No Limit		
		EG093A-F: Manganese	7439-96-5	0.5	µg/L	0.0566 mg/L	57.9	2.4	0% - 20%		
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	0.0005 mg/L	<0.5	0.0	No Limit		
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	0.0012 mg/L	1.3	0.0	No Limit		
		EG093A-F: Barium	7440-39-3	1	µg/L	16	16	0.0	0% - 50%		
		EG093A-F: Copper	7440-50-8	1	µg/L	<0.001 mg/L	<1	0.0	No Limit		
		EG093A-F: Boron	7440-42-8	100	µg/L	5.12 mg/L	5040	1.6	0% - 20%		
		EG093A-F: Tin	7440-31-5	5	µg/L	<0.005 mg/L	<5	0.0	No Limit		
		EG093A-F: Zinc	7440-66-6	5	µg/L	<0.005 mg/L	<5	0.0	No Limit		
EP2518087-001	Anonymous	EG093A-F: Beryllium	7440-41-7	0.1	µg/L	<0.1	<0.1	0.0	No Limit		
		EG093A-F: Molybdenum	7439-98-7	0.1	µg/L	10.4	10.2	2.0	0% - 20%		
		EG093A-F: Silver	7440-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit		
		EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	No Limit		
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.0	No Limit		
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.0	No Limit		
		EG093A-F: Antimony	7440-36-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit		
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.6	1.6	0.0	No Limit		
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit		
		EG093A-F: Manganese	7439-96-5	0.5	µg/L	0.5	<0.5	0.0	No Limit		
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit		
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.1	1.3	12.3	No Limit		
		EG093A-F: Barium	7440-39-3	1	µg/L	6	6	0.0	No Limit		
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.0	No Limit		
		EG093A-F: Boron	7440-42-8	100	µg/L	4720	4840	2.6	0% - 20%		
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.0	No Limit		
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.0	No Limit		
		EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 6976519)									
		EP2518013-001	Anonymous	EG093B-F: Selenium	7782-49-2	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP2518087-001	Anonymous	EG093B-F: Selenium	7782-49-2	2	µg/L	<2	<2	0.0	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 6976520)											
EP2518235-066	SW13	EG093B-F: Selenium	7782-49-2	2	µg/L	<2	<2	0.0	No Limit		
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 6976521)											
EP2518235-066	SW13	EG093A-F: Beryllium	7440-41-7	0.1	µg/L	<0.1	<0.1	0.0	No Limit		
		EG093A-F: Molybdenum	7439-98-7	0.1	µg/L	10.5	10.6	1.5	0% - 20%		
		EG093A-F: Silver	7440-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit		



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 6976521) - continued									
EP2518235-066	SW13	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EG093A-F: Antimony	7440-36-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.6	1.6	0.0	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EG093A-F: Manganese	7439-96-5	0.5	µg/L	0.7	0.6	0.0	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	1.1	0.9	25.1	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.4	1.5	0.0	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	6	6	0.0	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.0	No Limit
		EG093A-F: Boron	7440-42-8	100	µg/L	4560	4720	3.5	0% - 20%
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.0	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.0	No Limit
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC Lot: 6979102)									
EP2518235-063	SW10	EG094A-F: Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EG094A-F: Beryllium	7440-41-7	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EG094A-F: Cobalt	7440-48-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EG094A-F: Lead	7439-92-1	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EG094A-F: Molybdenum	7439-98-7	0.1	µg/L	8.3	8.5	2.6	0% - 20%
		EG094A-F: Silver	7440-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EG094A-F: Antimony	7440-36-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EG094A-F: Arsenic	7440-38-2	0.2	µg/L	2.1	2.1	0.0	0% - 50%
		EG094A-F: Chromium	7440-47-3	0.2	µg/L	0.3	0.3	0.0	No Limit
		EG094A-F: Tin	7440-31-5	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EG094A-F: Vanadium	7440-62-2	0.2	µg/L	0.7	0.7	0.0	No Limit
		EG094A-F: Barium	7440-39-3	0.5	µg/L	42.2	41.6	1.4	0% - 20%
		EG094A-F: Copper	7440-50-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EG094A-F: Manganese	7439-96-5	0.5	µg/L	22.4	22.1	1.0	0% - 20%
		EG094A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EG094A-F: Zinc	7440-66-6	1	µg/L	6	6	0.0	No Limit
		EG094A-F: Boron	7440-42-8	5	µg/L	717	704	1.9	0% - 20%
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC Lot: 6979103)									
EP2518235-063	SW10	EG094B-F: Selenium	7782-49-2	0.2	µg/L	0.3	0.3	0.0	No Limit
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QC Lot: 6977123)									
EP2518141-001	Anonymous	EP071SG: C15 - C28 Fraction	----	100	µg/L	110	<100	0.0	No Limit
		EP071SG: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit

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 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QC Lot: 6977123) - continued									
EP2518141-001	Anonymous	EP071SG: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QC Lot: 6977123)									
EP2518141-001	Anonymous	EP071SG: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071SG: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071SG: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6976888)									
EP2518218-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP2518235-061	SW04	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6977122)									
EP2518141-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	7600	6580	14.5	0% - 20%
		EP071: C10 - C14 Fraction	----	50	µg/L	580	450	26.1	0% - 50%
		EP071: C29 - C36 Fraction	----	50	µg/L	180	160	12.9	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6976888)									
EP2518218-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP2518235-061	SW04	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6977122)									
EP2518141-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	2150	1780	18.8	0% - 20%
		EP071: >C16 - C34 Fraction	----	100	µg/L	6190	5390	13.8	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
EP080: BTEXN (QC Lot: 6976888)									
EP2518218-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP2518235-061	SW04	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6980345)									
EP2518228-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.21	0.21	0.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.66	0.59	10.9	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6980345) - continued									
EP2518228-001	Anonymous	EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP2518228-003	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.23	0.21	5.4	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.71	0.60	16.2	0% - 20%
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6980345)									
EP2518228-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP2518228-003	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6980345)									
EP2518228-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP2518228-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6980345)									
EP2518228-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP2518228-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

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Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6980345) - continued									
EP2518228-003	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6980345)									
EP2518228-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.99	0.91	8.4	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.87	0.80	8.4	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.96	0.89	7.6	0% - 20%
EP2518228-003	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	1.06	0.93	13.1	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.94	0.81	14.9	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	1.03	0.90	13.5	0% - 20%

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6980761)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	77.39 mg/kg	96.0	70.0	130
EG005T: Barium	7440-39-3	10	mg/kg	<10	85.98 mg/kg	109	70.0	130
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	18.67 mg/kg	88.6	70.0	130
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	10.47 mg/kg	89.8	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	46.13 mg/kg	98.4	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	58.42 mg/kg	89.9	70.0	130
EG005T: Manganese	7439-96-5	5	mg/kg	<5	531.08 mg/kg	105	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	14.48 mg/kg	88.1	70.0	130
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	55.58 mg/kg	90.9	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	190.4 mg/kg	86.6	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6980775)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	77.39 mg/kg	97.4	70.0	130
EG005T: Barium	7440-39-3	10	mg/kg	<10	85.98 mg/kg	107	70.0	130
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	18.67 mg/kg	95.1	70.0	130
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	10.47 mg/kg	96.0	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	46.13 mg/kg	97.6	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	58.42 mg/kg	91.2	70.0	130
EG005T: Manganese	7439-96-5	5	mg/kg	<5	531.08 mg/kg	108	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	14.48 mg/kg	94.6	70.0	130
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	55.58 mg/kg	96.2	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	190.4 mg/kg	93.7	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980747)								

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Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
				Result			Low	High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980747) - continued								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.098 mg/kg	90.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980759)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.098 mg/kg	100	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980773)								
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.098 mg/kg	88.3	70.0	130
ED040T : Total Sulfate by ICPAES (QCLot: 6980843)								
ED040T: Sulfate as SO4 2-	14808-79-8	100	mg/kg	<100	499.5 mg/kg	91.3	80.0	120
ED040T : Total Sulfate by ICPAES (QCLot: 6980844)								
ED040T: Sulfate as SO4 2-	14808-79-8	100	mg/kg	<100	499.5 mg/kg	88.3	80.0	120
ED042T: Total Sulfur by LECO (QCLot: 6987499)								
ED042T: Sulfur - Total as S (LECO)	----	0.01	%	<0.01	0.31 %	101	80.0	120
				<0.01	10.95 %	99.7	80.0	120
ED042T: Total Sulfur by LECO (QCLot: 6987501)								
ED042T: Sulfur - Total as S (LECO)	----	0.01	%	<0.01	0.31 %	102	80.0	120
				<0.01	10.95 %	102	80.0	120
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980746)								
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.59 mg/kg	104	70.0	130
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	18.67 mg/kg	98.8	70.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	46.13 mg/kg	88.3	70.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	58.42 mg/kg	98.8	70.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.48 mg/kg	99.4	70.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	190.4 mg/kg	98.5	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980758)								
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.59 mg/kg	97.5	70.0	130
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	18.67 mg/kg	102	70.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	46.13 mg/kg	93.0	70.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	58.42 mg/kg	102	70.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.48 mg/kg	103	70.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	190.4 mg/kg	98.2	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980772)								
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.59 mg/kg	99.3	70.0	130
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	18.67 mg/kg	106	70.0	130
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	46.13 mg/kg	93.1	70.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	58.42 mg/kg	100	70.0	130



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980772) - continued								
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	14.48 mg/kg	105	70.0	130
EG020-SD: Zinc	7440-66-6	1	mg/kg	<1.0	190.4 mg/kg	100	70.0	130
EG035E: 1M HCl extractable Mercury by FIMS (QCLot: 6981660)								
EG035E: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.25 mg/kg	115	70.0	130
EG035E: 1M HCl extractable Mercury by FIMS (QCLot: 6986731)								
EG035E: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.25 mg/kg	114	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6980774)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.115 mg/kg	90.9	70.0	130
EG036: Methyl Mercury (QCLot: 6991735)								
EG036: Methyl mercury	22967-92-6	0.1	mg/kg	<0.10	0.05 mg/kg	114	70.0	130
				<0.10	0.1 mg/kg	107	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6979961)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	106	88.5	110
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6980861)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	1000 mg/kg	97.0	70.0	110
				<20	100 mg/kg	92.5	70.0	128
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6980862)								
EK067G: Total Phosphorus as P	----	2	mg/kg	<2	440 mg/kg	91.9	70.0	110
				<2	44 mg/kg	89.7	73.9	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 6987498)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	100	80.0	120
				<0.02	32.3 %	96.1	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 6987500)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	102	80.0	120
				<0.02	32.3 %	93.7	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 6987502)								
EP003: Total Organic Carbon	----	0.02	%	<0.02	0.55 %	103	80.0	120
				<0.02	32.3 %	96.4	80.0	120
EP075(SIM)A: Phenolic Compounds (QCLot: 6977094)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	101	61.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	104	66.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	107	62.0	126
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	109	63.0	129
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	81.5	61.0	131

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Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)A: Phenolic Compounds (QCLot: 6977094) - continued								
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	106	60.0	132
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	97.8	63.0	131
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	90.8	67.0	123
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	108	65.0	125
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	85.3	52.0	132
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	90.4	64.0	130
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	3 mg/kg	96.0	34.0	138
EP075(SIM)A: Phenolic Compounds (QCLot: 6979792)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	110	61.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	109	66.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	109	62.0	126
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	115	63.0	129
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	90.2	61.0	131
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	99.0	60.0	132
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	101	63.0	131
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	101	67.0	123
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	110	65.0	125
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	93.8	52.0	132
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	92.0	64.0	130
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	3 mg/kg	88.7	34.0	138
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977068)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	35 mg/kg	119	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977069)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	378 mg/kg	101	75.9	145
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	630 mg/kg	105	70.9	140
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	100 mg/kg	110	60.2	132
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977085)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	378 mg/kg	89.8	75.9	145
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	630 mg/kg	94.7	70.9	140
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	100 mg/kg	96.2	60.2	132
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977090)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	35 mg/kg	113	70.0	130

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Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit			Result	LCS	Low
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977100)								
EP080-SD: C6 - C9 Fraction	----	3	mg/kg	<3	35 mg/kg	113	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6979809)								
EP071-SD: C10 - C14 Fraction	----	3	mg/kg	<3	756 mg/kg	85.0	75.9	145
EP071-SD: C15 - C28 Fraction	----	3	mg/kg	<3	1260 mg/kg	87.4	70.9	140
EP071-SD: C29 - C36 Fraction	----	5	mg/kg	<5	200 mg/kg	90.8	60.2	132
EP071-SD: C10 - C36 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977068)								
EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	45 mg/kg	116	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977069)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	510 mg/kg	102	76.1	147
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	554 mg/kg	108	63.4	132
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	33 mg/kg	111	54.9	130
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977085)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	510 mg/kg	92.5	76.1	147
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	554 mg/kg	97.4	63.4	132
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	33 mg/kg	97.2	54.9	130
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977090)								
EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	45 mg/kg	110	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977100)								
EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	45 mg/kg	110	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6979809)								
EP071-SD: >C10 - C16 Fraction	----	3	mg/kg	<3	1020 mg/kg	85.8	76.1	147
EP071-SD: >C16 - C34 Fraction	----	3	mg/kg	<3	1108 mg/kg	89.3	63.4	132
EP071-SD: >C34 - C40 Fraction	----	5	mg/kg	<5	66 mg/kg	90.2	54.9	130
EP071-SD: >C10 - C40 Fraction (sum)	----	3	mg/kg	<3	----	----	----	----
EP080-SD: BTEXN (QCLot: 6977068)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	114	70.0	130
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	2 mg/kg	109	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	2 mg/kg	121	70.0	130
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	4 mg/kg	114	70.0	130
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	2 mg/kg	112	70.0	130

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
				Result			Low	High
EP080-SD: BTEXN (QCLot: 6977068) - continued								
EP080-SD: Total Xylenes	----	0.2	mg/kg	<0.2	----	----	----	----
EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	0.5 mg/kg	95.2	70.0	130
EP080-SD: BTEXN (QCLot: 6977090)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	112	70.0	130
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	2 mg/kg	108	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	2 mg/kg	116	70.0	130
EP080-SD: meta- & para-Xylene	108-38-3	0.2	mg/kg	<0.2	4 mg/kg	110	70.0	130
	106-42-3							
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	2 mg/kg	111	70.0	130
EP080-SD: Total Xylenes	----	0.2	mg/kg	<0.2	----	----	----	----
EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	0.5 mg/kg	118	70.0	130
EP080-SD: BTEXN (QCLot: 6977100)								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	110	70.0	130
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	2 mg/kg	106	70.0	130
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	2 mg/kg	115	70.0	130
EP080-SD: meta- & para-Xylene	108-38-3	0.2	mg/kg	<0.2	4 mg/kg	110	70.0	130
	106-42-3							
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	2 mg/kg	110	70.0	130
EP080-SD: Total Xylenes	----	0.2	mg/kg	<0.2	----	----	----	----
EP080-SD: Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	0.5 mg/kg	115	70.0	130
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6977070)								
EP132B-SD: Naphthalene	91-20-3	5	µg/kg	<5	25 µg/kg	89.0	47.9	130
EP132B-SD: 2-Methylnaphthalene	91-57-6	5	µg/kg	<5	25 µg/kg	90.2	50.2	126
EP132B-SD: Acenaphthylene	208-96-8	4	µg/kg	<4	25 µg/kg	99.3	38.0	131
EP132B-SD: Acenaphthene	83-32-9	4	µg/kg	<4	25 µg/kg	88.3	45.3	125
EP132B-SD: Fluorene	86-73-7	4	µg/kg	<4	25 µg/kg	88.4	53.2	114
EP132B-SD: Phenanthrene	85-01-8	4	µg/kg	<4	25 µg/kg	94.9	45.1	125
EP132B-SD: Anthracene	120-12-7	4	µg/kg	<4	25 µg/kg	107	57.1	117
EP132B-SD: Fluoranthene	206-44-0	4	µg/kg	<4	25 µg/kg	110	43.7	129
EP132B-SD: Pyrene	129-00-0	4	µg/kg	<4	25 µg/kg	105	44.1	132
EP132B-SD: Benz(a)anthracene	56-55-3	4	µg/kg	<4	25 µg/kg	89.3	47.0	116
EP132B-SD: Chrysene	218-01-9	4	µg/kg	<4	25 µg/kg	91.2	48.3	132

Acceptable Limits (%)

<i>Low</i>	<i>High</i>
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EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6976873)



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6976873) - continued								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	0.00114 mg/kg	104	70.0	130
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	93.2	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	82.2	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	95.8	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	92.2	68.0	136
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	0.0012 mg/kg	108	70.0	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	114	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6976874)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	0.00114 mg/kg	97.8	70.0	130
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	90.9	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	95.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	102	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	87.5	68.0	136
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	0.0012 mg/kg	96.7	70.0	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	98.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6976873)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	87.1	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.2	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00125 mg/kg	101	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6976874)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	94.6	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.0	71.0	131



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6976874) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.4	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	69.0	135
EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00125 mg/kg	88.4	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6976873)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.3	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	97.4	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.0	61.9	139
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6976874)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	119	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.0	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.1	61.9	139
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6976873)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	98.3	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	89.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	114	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	83.3	54.8	124



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6976874)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	103	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	89.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	99.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	81.7	54.8	124
EP231P: PFAS Sums (QCLot: 6976873)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231P: PFAS Sums (QCLot: 6976874)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----
Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED037P: Alkalinity by PC Titrator (QCLot: 6978591)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	20 mg/L	108	85.1	126
				----	200 mg/L	92.9	90.5	111
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 6987821)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	102	89.9	112
				<1	500 mg/L	98.6	89.9	112
ED045G: Chloride by Discrete Analyser (QCLot: 6987822)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	97.7	88.6	113
				<1	1000 mg/L	103	88.6	113
ED093F: Dissolved Major Cations (QCLot: 6987484)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	108	86.5	117
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	99.5	88.4	110
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	101	91.4	113
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	98.1	84.6	108
EG020F: Dissolved Metals by ICP-MS (QCLot: 6987485)								
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.0	87.3	107
EG035F: Dissolved Mercury by FIMS (QCLot: 7019572)								
EG035F-LL: Mercury	7439-97-6	0.00004	mg/L	<0.00004	0.005 mg/L	97.4	85.7	118



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level (QCLot: 6990777)								
EG050G: Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	0.05 mg/L	100	90.9	109
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level (QCLot: 6990794)								
EG050G: Hexavalent Chromium	18540-29-9	0.001	mg/L	<0.001	0.05 mg/L	101	90.9	109
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976518)								
EG093A-F: Antimony	7440-36-0	0.5	µg/L	<0.5	----	----	----	----
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	101	83.8	111
EG093A-F: Barium	7440-39-3	1	µg/L	<1	10 µg/L	99.3	84.3	113
EG093A-F: Beryllium	7440-41-7	0.1	µg/L	<0.1	10 µg/L	98.0	75.1	128
EG093A-F: Boron	7440-42-8	100	µg/L	<100	----	----	----	----
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	98.3	87.8	109
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	97.7	87.1	112
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	99.0	83.4	113
EG093A-F: Copper	7440-50-8	1	µg/L	<1	10 µg/L	102	82.3	113
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	98.8	88.6	110
EG093A-F: Manganese	7439-96-5	0.5	µg/L	<0.5	10 µg/L	103	86.2	112
EG093A-F: Molybdenum	7439-98-7	0.1	µg/L	<0.1	10 µg/L	97.4	83.9	109
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	105	80.5	115
EG093A-F: Silver	7440-22-4	0.1	µg/L	<0.1	2 µg/L	95.3	87.1	107
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	99.0	85.7	106
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	97.0	87.3	114
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	10 µg/L	99.1	78.1	119
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976519)								
EG093B-F: Selenium	7782-49-2	2	µg/L	<2	10 µg/L	95.1	74.0	102
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976520)								
EG093B-F: Selenium	7782-49-2	2	µg/L	<2	10 µg/L	84.3	74.0	102
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976521)								
EG093A-F: Antimony	7440-36-0	0.5	µg/L	<0.5	----	----	----	----
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	95.9	83.8	111
EG093A-F: Barium	7440-39-3	1	µg/L	<1	10 µg/L	96.4	84.3	113
EG093A-F: Beryllium	7440-41-7	0.1	µg/L	<0.1	10 µg/L	94.7	75.1	128
EG093A-F: Boron	7440-42-8	100	µg/L	<100	----	----	----	----
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	96.5	87.8	109
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	97.4	87.1	112
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	96.5	83.4	113

Method Blank (MB) Report

Spike

Spike Recovery (%)

Acceptable Limits (%)

Method: Compound

CAS Number

LOR

Unit

Result

Concentration

LCS

Low

High

EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976521) - continued

EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 6979102)

EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 6979103)

EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 6977123)

EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 6977123)



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 6977123) - continued								
EP071SG: >C10 - C16 Fraction	----	100	µg/L	<100	6540 µg/L	49.4	41.8	109
EP071SG: >C16 - C34 Fraction	----	100	µg/L	<100	7770 µg/L	56.5	36.7	115
EP071SG: >C34 - C40 Fraction	----	100	µg/L	<100	473 µg/L	48.4	33.9	115
EP075(SIM)A: Phenolic Compounds (QCLot: 6977125)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	10 µg/L	18.0	9.07	46.0
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	10 µg/L	40.5	34.3	96.6
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	10 µg/L	40.1	24.9	92.6
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	20 µg/L	37.0	21.8	83.4
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	10 µg/L	38.2	33.9	104
EP075(SIM): 2,4-Dimethylphenol	105-67-9	1	µg/L	<1.0	10 µg/L	43.5	33.9	102
EP075(SIM): 2,4-Dichlorophenol	120-83-2	1	µg/L	<1.0	10 µg/L	41.0	34.3	104
EP075(SIM): 2,6-Dichlorophenol	87-65-0	1	µg/L	<1.0	10 µg/L	38.6	38.4	102
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	10 µg/L	43.8	29.8	106
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	1	µg/L	<1.0	10 µg/L	35.8	31.9	109
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	1	µg/L	<1.0	10 µg/L	40.5	34.2	110
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	33.4	13.6	104
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6977125)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	43.4	41.9	99.1
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	46.4	36.1	113
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	47.5	35.8	102
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	50.8	33.5	113
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	63.8	36.5	115
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	62.5	46.4	109
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	74.8	40.4	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	77.0	40.2	123
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	69.0	40.2	126
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	72.3	45.6	121
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	72.2	43.2	123
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	76.4	47.3	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	68.7	44.8	123
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	70.0	38.8	120
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	70.1	39.4	119
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	67.8	40.1	123



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
CAS Number	LOR	Unit					Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6977125) - continued								
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6976888)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	88.0	73.6	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6977122)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4771 µg/L	70.0	39.3	103
EP071: C15 - C28 Fraction	----	100	µg/L	<100	8513 µg/L	83.7	47.2	122
EP071: C29 - C36 Fraction	----	50	µg/L	<50	1510 µg/L	84.4	42.5	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6976888)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	87.8	73.9	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6977122)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6540 µg/L	75.2	47.0	100
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	7770 µg/L	82.8	46.2	116
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	473 µg/L	92.4	24.7	137
EP080: BTEXN (QCLot: 6976888)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	89.1	84.1	114
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	85.3	81.0	115
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	88.4	84.4	113
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	92.9	84.3	114
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	90.3	86.5	111
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	83.0	77.0	118
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6980345)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	----	----	----	----
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	85.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	83.4	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	89.2	65.0	140
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	0.24 µg/L	89.4	70.0	135
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	79.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6980355)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	----	----	----	----
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	99.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.8	71.0	127



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6980355) - continued								
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	90.2	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	97.9	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	0.24 µg/L	91.5	70.0	135
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	102	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6980345)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	101	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	98.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	98.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.25 µg/L	96.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6980355)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	102	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	96.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	98.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	99.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.25 µg/L	98.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6980345)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	90.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	94.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.0	60.5	138

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 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6980345) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.2	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	83.4	62.2	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6980355)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	104	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	88.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	84.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	119	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.8	62.2	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6980345)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	106	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	101	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	75.7	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6980355)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	112	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	109	64.2	133
EP231P: PFAS Sums (QCLot: 6980345)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 6980355)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----

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 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
Method: Compound	CAS Number	LOR	Unit	Result				
EP231P: PFAS Sums (QCLot: 6980355) - continued								
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6980761)							
EP2518235-028	NNB	EG005T: Arsenic	7440-38-2	50 mg/kg	101	70.0	130
		EG005T: Barium	7440-39-3	50 mg/kg	101	70.0	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	92.0	70.0	130
		EG005T: Cadmium	7440-43-9	12.5 mg/kg	80.8	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	85.5	70.0	130
		EG005T: Cobalt	7440-48-4	50 mg/kg	83.1	70.0	130
		EG005T: Copper	7440-50-8	50 mg/kg	102	70.0	130
		EG005T: Lead	7439-92-1	50 mg/kg	86.8	70.0	130
		EG005T: Manganese	7439-96-5	50 mg/kg	95.1	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	82.6	70.0	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	89.7	70.0	130
		EG005T: Zinc	7440-66-6	50 mg/kg	78.0	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6980775)							
EP2518235-038	NEC1b	EG005T: Arsenic	7440-38-2	50 mg/kg	103	70.0	130
		EG005T: Barium	7440-39-3	50 mg/kg	107	70.0	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	12.5 mg/kg	96.0	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	98.9	70.0	130
		EG005T: Cobalt	7440-48-4	50 mg/kg	95.8	70.0	130
		EG005T: Copper	7440-50-8	50 mg/kg	102	70.0	130
		EG005T: Lead	7439-92-1	50 mg/kg	95.8	70.0	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.0	70.0	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	96.5	70.0	130
		EG005T: Zinc	7440-66-6	50 mg/kg	129	70.0	130

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980747)							
EP2518235-015	DO3	EG035T-LL: Mercury	7439-97-6	1 mg/kg	82.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980759)							
EP2518235-019	DO4a	EG035T-LL: Mercury	7439-97-6	1 mg/kg	82.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 6980773)							
EP2518235-038	NEC1b	EG035T-LL: Mercury	7439-97-6	1 mg/kg	72.3	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980746)							
EP2518235-002	CH2	EG020-SD: Cadmium	7440-43-9	12.5 mg/kg	102	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	95.2	70.0	130
		EG020-SD: Copper	7440-50-8	50 mg/kg	92.0	70.0	130
		EG020-SD: Lead	7439-92-1	50 mg/kg	97.3	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	94.4	70.0	130
		EG020-SD: Zinc	7440-66-6	50 mg/kg	99.0	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980758)							
EP2518235-019	DO4a	EG020-SD: Cadmium	7440-43-9	12.5 mg/kg	101	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	95.4	70.0	130
		EG020-SD: Copper	7440-50-8	50 mg/kg	93.4	70.0	130
		EG020-SD: Lead	7439-92-1	50 mg/kg	96.5	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	99.7	70.0	130
		EG020-SD: Zinc	7440-66-6	50 mg/kg	101	70.0	130
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6980772)							
EP2518235-038	NEC1b	EG020-SD: Cadmium	7440-43-9	12.5 mg/kg	96.3	70.0	130
		EG020-SD: Zinc	7440-66-6	50 mg/kg	103	70.0	130
EP2518235-038	NEC1b	EG020-SD: Chromium	7440-47-3	50 mg/kg	101	70.0	130
		EG020-SD: Copper	7440-50-8	50 mg/kg	98.1	70.0	130
		EG020-SD: Lead	7439-92-1	50 mg/kg	101	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	101	70.0	130
EG035E: 1M HCl extractable Mercury by FIMS (QCLot: 6981660)							
EP2518235-026	WB	EG035E: Mercury	7439-97-6	0.25 mg/kg	# 29.2	70.0	130
EG035E: 1M HCl extractable Mercury by FIMS (QCLot: 6986731)							
EP2518235-046	NEC5b	EG035E: Mercury	7439-97-6	0.25 mg/kg	# 22.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6980774)							
EP2518235-038	NEC1b	EG035T: Mercury	7439-97-6	1 mg/kg	90.0	70.0	130
EG036: Methyl Mercury (QCLot: 6991735)							
EB2537278-001	Anonymous	EG036: Methyl mercury	22967-92-6	1 mg/kg	124	70.0	130
EB2537278-001	Anonymous	EG036: Methyl mercury	22967-92-6	1 mg/kg	124	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6979961)							

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 Work Order : EP2518235 Amendment 1
 Client : WA MARINE PTY LTD
 Project : 25ENV445



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6979961) - continued							
EP2518235-029	NNBD	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	120	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6980861)							
EP2518012-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	1250 mg/kg	105	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6980862)							
EP2518235-029	NNBD	EK067G: Total Phosphorus as P	----	250 mg/kg	98.2	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 6977094)							
EP2518235-040	NEC2b	EP075(SIM): Phenol	108-95-2	3 mg/kg	103	73.4	135
		EP075(SIM): 2-Chlorophenol	95-57-8	3 mg/kg	101	71.7	136
		EP075(SIM): 2-Nitrophenol	88-75-5	3 mg/kg	89.2	62.8	137
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	102	73.6	128
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	93.6	18.0	152
EP075(SIM)A: Phenolic Compounds (QCLot: 6979792)							
EP2518262-002	Anonymous	EP075(SIM): Phenol	108-95-2	3 mg/kg	105	73.4	135
		EP075(SIM): 2-Chlorophenol	95-57-8	3 mg/kg	111	71.7	136
		EP075(SIM): 2-Nitrophenol	88-75-5	3 mg/kg	# 46.2	62.8	137
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	107	73.6	128
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	112	18.0	152
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977068)							
EP2518235-002	CH2	EP080-SD: C6 - C9 Fraction	----	24 mg/kg	106	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977069)							
EP2518235-002	CH2	EP071-SD: C10 - C14 Fraction	----	378 mg/kg	95.4	70.0	130
		EP071-SD: C15 - C28 Fraction	----	630 mg/kg	97.1	70.0	130
		EP071-SD: C29 - C36 Fraction	----	100 mg/kg	101	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977085)							
EP2518235-040	NEC2b	EP071-SD: C10 - C14 Fraction	----	378 mg/kg	86.4	70.0	130
		EP071-SD: C15 - C28 Fraction	----	630 mg/kg	86.5	70.0	130
		EP071-SD: C29 - C36 Fraction	----	100 mg/kg	84.4	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977090)							
EP2518235-040	NEC2b	EP080-SD: C6 - C9 Fraction	----	24 mg/kg	94.4	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6977100)							
EP2518235-028	NNB	EP080-SD: C6 - C9 Fraction	----	24 mg/kg	100	70.0	130
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6979809)							
EP2518235-028	NNB	EP071-SD: C10 - C14 Fraction	----	756 mg/kg	81.8	70.0	130
		EP071-SD: C15 - C28 Fraction	----	1260 mg/kg	84.7	70.0	130
		EP071-SD: C29 - C36 Fraction	----	200 mg/kg	88.5	70.0	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977068)							
EP2518235-002	CH2	EP080-SD: C6 - C10 Fraction	C6_C10	29 mg/kg	104	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977069)							
EP2518235-002	CH2	EP071-SD: >C10 - C16 Fraction	----	510 mg/kg	96.1	70.0	130
		EP071-SD: >C16 - C34 Fraction	----	554 mg/kg	99.1	70.0	130
		EP071-SD: >C34 - C40 Fraction	----	33 mg/kg	103	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977085)							
EP2518235-040	NEC2b	EP071-SD: >C10 - C16 Fraction	----	510 mg/kg	87.0	70.0	130
		EP071-SD: >C16 - C34 Fraction	----	554 mg/kg	87.2	70.0	130
		EP071-SD: >C34 - C40 Fraction	----	33 mg/kg	83.6	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977090)							
EP2518235-040	NEC2b	EP080-SD: C6 - C10 Fraction	C6_C10	29 mg/kg	87.8	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6977100)							
EP2518235-028	NNB	EP080-SD: C6 - C10 Fraction	C6_C10	29 mg/kg	97.8	70.0	130
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 6979809)							
EP2518235-028	NNB	EP071-SD: >C10 - C16 Fraction	----	1020 mg/kg	82.9	70.0	130
		EP071-SD: >C16 - C34 Fraction	----	1108 mg/kg	86.7	70.0	130
		EP071-SD: >C34 - C40 Fraction	----	66 mg/kg	88.3	70.0	130
EP080-SD: BTEXN (QCLot: 6977068)							
EP2518235-002	CH2	EP080-SD: Benzene	71-43-2	2 mg/kg	106	70.0	130
		EP080-SD: Toluene	108-88-3	2 mg/kg	105	70.0	130
EP080-SD: BTEXN (QCLot: 6977090)							
EP2518235-040	NEC2b	EP080-SD: Benzene	71-43-2	2 mg/kg	104	70.0	130
		EP080-SD: Toluene	108-88-3	2 mg/kg	97.4	70.0	130
EP080-SD: BTEXN (QCLot: 6977100)							
EP2518235-028	NNB	EP080-SD: Benzene	71-43-2	2 mg/kg	102	70.0	130
		EP080-SD: Toluene	108-88-3	2 mg/kg	99.5	70.0	130
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6977070)							
EP2518235-002	CH2	EP132B-SD: Naphthalene	91-20-3	25 µg/kg	96.1	34.3	130
		EP132B-SD: 2-Methylnaphthalene	91-57-6	25 µg/kg	99.3	48.4	123
		EP132B-SD: Acenaphthylene	208-96-8	25 µg/kg	108	29.3	140
		EP132B-SD: Acenaphthene	83-32-9	25 µg/kg	103	36.8	122
		EP132B-SD: Fluorene	86-73-7	25 µg/kg	110	64.0	118
		EP132B-SD: Phenanthrene	85-01-8	25 µg/kg	89.7	59.0	117
		EP132B-SD: Anthracene	120-12-7	25 µg/kg	96.1	39.2	143
		EP132B-SD: Fluoranthene	206-44-0	25 µg/kg	104	66.0	118
		EP132B-SD: Pyrene	129-00-0	25 µg/kg	97.0	70.0	116



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6977070) - continued							
EP2518235-002	CH2	EP132B-SD: Benz(a)anthracene	56-55-3	25 µg/kg	109	16.2	186
		EP132B-SD: Chrysene	218-01-9	25 µg/kg	96.0	22.8	127
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	25 µg/kg	101	14.8	130
			205-82-3				
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	25 µg/kg	85.9	24.0	121
		EP132B-SD: Benzo(e)pyrene	192-97-2	25 µg/kg	86.6	50.0	120
		EP132B-SD: Benzo(a)pyrene	50-32-8	25 µg/kg	107	38.4	127
		EP132B-SD: Perylene	198-55-0	25 µg/kg	93.5	50.0	120
		EP132B-SD: Benzo(g,h,i)perylene	191-24-2	25 µg/kg	89.7	41.9	103
		EP132B-SD: Dibenz(a,h)anthracene	53-70-3	25 µg/kg	87.5	35.0	141
	EP132B-SD: Indeno(1,2,3.cd)pyrene	193-39-5	25 µg/kg	90.6	34.7	116	
	EP132B-SD: Coronene	191-07-1	25 µg/kg	87.9	20.9	128	
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6977074)							
EP2518235-040	NEC2b	EP132B-SD: Naphthalene	91-20-3	25 µg/kg	77.5	34.3	130
		EP132B-SD: 2-Methylnaphthalene	91-57-6	25 µg/kg	82.8	48.4	123
		EP132B-SD: Acenaphthylene	208-96-8	25 µg/kg	54.0	29.3	140
		EP132B-SD: Acenaphthene	83-32-9	25 µg/kg	68.6	36.8	122
		EP132B-SD: Fluorene	86-73-7	25 µg/kg	71.6	64.0	118
		EP132B-SD: Phenanthrene	85-01-8	25 µg/kg	78.7	59.0	117
		EP132B-SD: Anthracene	120-12-7	25 µg/kg	76.5	39.2	143
		EP132B-SD: Fluoranthene	206-44-0	25 µg/kg	88.2	66.0	118
		EP132B-SD: Pyrene	129-00-0	25 µg/kg	83.4	70.0	116
		EP132B-SD: Benz(a)anthracene	56-55-3	25 µg/kg	92.7	16.2	186
		EP132B-SD: Chrysene	218-01-9	25 µg/kg	83.1	22.8	127
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	25 µg/kg	76.9	14.8	130
			205-82-3				
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	25 µg/kg	71.0	24.0	121
		EP132B-SD: Benzo(e)pyrene	192-97-2	25 µg/kg	72.9	50.0	120
		EP132B-SD: Benzo(a)pyrene	50-32-8	25 µg/kg	86.8	38.4	127
		EP132B-SD: Perylene	198-55-0	25 µg/kg	76.1	50.0	120
		EP132B-SD: Benzo(g,h,i)perylene	191-24-2	25 µg/kg	77.4	41.9	103
		EP132B-SD: Dibenz(a,h)anthracene	53-70-3	25 µg/kg	75.1	35.0	141
		EP132B-SD: Indeno(1,2,3.cd)pyrene	193-39-5	25 µg/kg	75.4	34.7	116
			EP132B-SD: Coronene	191-07-1	25 µg/kg	75.6	20.9
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6976873)							
EP2518242-018	Anonymous	EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.00114 mg/kg	122	70.0	130
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	105	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	94.5	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	78.8	67.0	130

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6976873) - continued							
EP2518242-018	Anonymous	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	94.6	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	90.2	68.0	136
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0012 mg/kg	111	70.0	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	120	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6976874)							
EP2518235-051	SS03	EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.00114 mg/kg	103	70.0	130
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	93.7	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	92.8	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	95.4	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	99.6	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	86.5	68.0	136
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0012 mg/kg	82.9	70.0	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	79.1	59.0	134
		EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6976873)					
EP2518242-018	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	86.2	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	99.1	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	86.3	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	81.1	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	88.7	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	95.9	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	104	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	90.0	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	93.5	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	109	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00125 mg/kg	104	69.0	133
		EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6976874)					
EP2518235-051	SS03	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	97.7	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	79.7	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	80.5	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	84.6	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	89.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	98.6	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	89.8	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	97.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	107	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	88.4	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00125 mg/kg	90.9	69.0	133
		EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6976873)					



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6976873) - continued							
EP2518242-018	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	92.8	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	104	60.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	97.7	60.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	99.5	60.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	94.4	60.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	90.3	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	99.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6976874)							
EP2518235-051	SS03	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	102	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	107	60.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	100	60.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	109	60.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	106	60.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	104	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	101	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6976873)							
EP2518242-018	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	99.2	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	89.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	127	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	76.2	60.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6976874)							
EP2518235-051	SS03	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	106	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	99.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	111	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	125	60.0	130
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High

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Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 6987821)							
EP2518235-058	SW01	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	100 mg/L	# Not Determined	70.4	130
ED045G: Chloride by Discrete Analyser (QCLot: 6987822)							
EP2518235-058	SW01	ED045G: Chloride	16887-00-6	200 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 6987485)							
EP2518235-059	SW02	EG020A-F: Chromium	7440-47-3	1 mg/L	107	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 7019572)							
EP2518235-059	SW02	EG035F-LL: Mercury	7439-97-6	0.005 mg/L	95.8	70.0	130
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level (QCLot: 6990777)							
EP2518235-058	SW01	EG050G: Hexavalent Chromium	18540-29-9	0.05 mg/L	95.7	70.0	130
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level (QCLot: 6990794)							
EP2518235-065	SW12	EG050G: Hexavalent Chromium	18540-29-9	0.05 mg/L	100	70.0	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976518)							
EP2518013-002	Anonymous	EG093A-F: Arsenic	7440-38-2	50 µg/L	84.1	70.0	130
		EG093A-F: Barium	7440-39-3	50 µg/L	76.1	70.0	130
		EG093A-F: Beryllium	7440-41-7	50 µg/L	85.7	70.0	130
		EG093A-F: Cadmium	7440-43-9	12.5 µg/L	80.8	70.0	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	84.6	70.0	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	84.8	70.0	130
		EG093A-F: Copper	7440-50-8	50 µg/L	82.6	70.0	130
		EG093A-F: Lead	7439-92-1	50 µg/L	83.8	70.0	130
		EG093A-F: Manganese	7439-96-5	50 µg/L	# Not Determined	70.0	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	82.4	70.0	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	83.6	70.0	130
		EG093A-F: Zinc	7440-66-6	50 µg/L	81.9	70.0	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976521)							
EP2518235-067	NNB	EG093A-F: Arsenic	7440-38-2	50 µg/L	82.8	70.0	130
		EG093A-F: Barium	7440-39-3	50 µg/L	82.6	70.0	130
		EG093A-F: Beryllium	7440-41-7	50 µg/L	85.0	70.0	130
		EG093A-F: Cadmium	7440-43-9	12.5 µg/L	78.5	70.0	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	83.0	70.0	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	82.2	70.0	130
		EG093A-F: Copper	7440-50-8	50 µg/L	79.9	70.0	130
		EG093A-F: Lead	7439-92-1	50 µg/L	78.6	70.0	130
		EG093A-F: Manganese	7439-96-5	50 µg/L	82.3	70.0	130



Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 6976521) - continued							
EP2518235-067	NNB	EG093A-F: Nickel	7440-02-0	50 µg/L	80.4	70.0	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	81.0	70.0	130
		EG093A-F: Zinc	7440-66-6	50 µg/L	79.4	70.0	130
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 6979102)							
EP2518235-064	SW11	EG094A-F: Arsenic	7440-38-2	50 µg/L	106	81.0	141
		EG094A-F: Barium	7440-39-3	50 µg/L	98.9	70.0	130
		EG094A-F: Beryllium	7440-41-7	50 µg/L	90.8	66.2	135
		EG094A-F: Cadmium	7440-43-9	12.5 µg/L	104	79.1	129
		EG094A-F: Chromium	7440-47-3	50 µg/L	96.9	71.8	127
		EG094A-F: Cobalt	7440-48-4	50 µg/L	100	78.3	132
		EG094A-F: Copper	7440-50-8	50 µg/L	98.7	75.8	126
		EG094A-F: Lead	7439-92-1	50 µg/L	89.2	73.9	112
		EG094A-F: Manganese	7439-96-5	50 µg/L	92.4	69.6	127
		EG094A-F: Nickel	7440-02-0	50 µg/L	98.2	76.6	131
		EG094A-F: Vanadium	7440-62-2	50 µg/L	99.1	74.1	129
		EG094A-F: Zinc	7440-66-6	50 µg/L	99.9	76.8	133
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6976888)							
EP2518218-002	Anonymous	EP080: C6 - C9 Fraction	----	240 µg/L	91.9	77.0	137
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6977122)							
EP2518141-001	Anonymous	EP071: C10 - C14 Fraction	----	4771 µg/L	89.2	44.5	122
		EP071: C15 - C28 Fraction	----	8513 µg/L	120	55.1	143
		EP071: C29 - C36 Fraction	----	1510 µg/L	99.8	53.6	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6976888)							
EP2518218-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	290 µg/L	90.7	77.0	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6977122)							
EP2518141-001	Anonymous	EP071: >C10 - C16 Fraction	----	6540 µg/L	98.1	44.5	122
		EP071: >C16 - C34 Fraction	----	7770 µg/L	116	55.1	143
		EP071: >C34 - C40 Fraction	----	473 µg/L	113	53.6	128
EP080: BTEXN (QCLot: 6976888)							
EP2518218-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	110	77.0	122
		EP080: Toluene	108-88-3	20 µg/L	104	73.5	126
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6980345)							
EP2518228-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	92.1	72.0	129
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.232 µg/L	83.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	95.0	68.0	129
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	90.4	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	122	65.0	140

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Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6980345) - continued							
EP2518228-002	Anonymous	EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.24 µg/L	97.9	70.0	135
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	90.9	53.0	129
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6980345)							
EP2518228-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	89.1	73.0	142
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	78.3	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	87.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	82.0	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	83.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	101	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	98.4	71.0	134
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	97.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	106	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTeDA)	72629-94-8	0.25 µg/L	99.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.25 µg/L	98.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6980345)							
EP2518228-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	90.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	116	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	96.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	98.4	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	101	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6980345)							
EP2518228-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	104	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	101	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	105	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	70.4	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

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Amendment	: 1		
Client	: WA MARINE PTY LTD	Laboratory	: Environmental Division Perth
Contact	: Sam Billinghamhurst	Telephone	: +61-8-9406 1301
Project	: 25ENV445	Date Samples Received	: 30-Oct-2025
Site	: ChEMMS	Issue Date	: 24-Nov-2025
Sampler	: Eve Challander, Sam Billinghamhurst	No. of samples received	: 70
Order number	: ----	No. of samples analysed	: 70

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.

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Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons	EP2518235--039	NEC2a	C10 - C36 Fraction (sum)	----	20.8 %	0% - 20%	RPD exceeds LOR based limits
EP080-SD / EP071-SD: Total Recoverable Hydrocarbon	EP2518235--039	NEC2a	>C10 - C40 Fraction (sum)	----	26.5 %	0% - 20%	RPD exceeds LOR based limits
EP132B: Polynuclear Aromatic Hydrocarbons	EP2518235--013	SB4	Sum of PAHs	----	87.5 %	0% - 50%	RPD exceeds LOR based limits
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	EP2518235--038	NEC1b	Manganese	7439-96-5	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG035E: 1M HCl extractable Mercury by FIMS	EP2518235--026	WB	Mercury	7439-97-6	29.2 %	70.0-130%	Recovery less than lower data quality objective
EG035E: 1M HCl extractable Mercury by FIMS	EP2518235--046	NEC5b	Mercury	7439-97-6	22.5 %	70.0-130%	Recovery less than lower data quality objective
EP075(SIM)A: Phenolic Compounds	EP2518262--002	Anonymous	2-Nitrophenol	88-75-5	46.2 %	62.8-137%	Recovery less than lower data quality objective

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EP2518235--058	SW01	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EP2518235--058	SW01	Chloride	16887-00-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG093F: Dissolved Metals in Saline Water by ORC-ICP	EP2518013--002	Anonymous	Manganese	7439-96-5	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

Regular Sample Surrogates

Sub-Matrix: **SEDIMENT**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	EP2518235-054	SS09	2,4,6-Tribromophenol	118-79-6	22.9 %	40.0-132 %	Recovery less than lower data quality objective

Sub-Matrix: **MARINE WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
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Sub-Matrix: MARINE WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	EP2518235-061	SW04	2-Chlorophenol-D4	93951-73-6	21.5 %	29.4-120 %	Recovery less than lower data quality objective
EP075(SIM)T: PAH Surrogates	EP2518235-061	SW04	2-Fluorobiphenyl	321-60-8	21.0 %	33.8-131 %	Recovery less than lower data quality objective
EP075(SIM)T: PAH Surrogates	EP2518235-068	NNBD	2-Fluorobiphenyl	321-60-8	33.6 %	33.8-131 %	Recovery less than lower data quality objective
EP075(SIM)T: PAH Surrogates	EP2518235-068	NNBD	Anthracene-d10	1719-06-8	36.3 %	42.7-126 %	Recovery less than lower data quality objective

Outliers : Analysis Holding Time Compliance

Matrix: SOIL

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
ED040T : Total Sulfate by ICPAES							
Soil Glass Jar - Unpreserved							
SB1a,	HC,	05-Nov-2025	31-Oct-2025	5	----	----	----
WB,	CZ,						
NNB,	NNBD,						
NNBDU,	CC,						
WC,	NEC,						
NB,	SCB,						
KB							
Soil Glass Jar - Unpreserved							
DO3,	DO1,	05-Nov-2025	02-Nov-2025	3	----	----	----
DO2,	DO4,						
DO4a,	DO5,						
DO6,	DO7,						
DO7a							

Matrix: WATER

[illegible]

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Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
Container / Client Sample ID(s)						
EP075(SIM)A: Phenolic Compounds - Analysis Holding Time Compliance						
Amber Glass Bottle - Unpreserved SW12, NNB, NNBD	04-Nov-2025	02-Nov-2025	2	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved SW12, NNB, NNBD	04-Nov-2025	02-Nov-2025	2	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved SW12, NNB, NNBD	04-Nov-2025	02-Nov-2025	2	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Amber Glass Bottle - Unpreserved SW12, NNB, NNBD	04-Nov-2025	02-Nov-2025	2	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Control Samples (LCS)						
TKN as N By Discrete Analyser	EK061G	2	15	13.33	15.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	1	14	7.14	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

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Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content (Dried @ 105-110°C)									
Soil Glass Jar - Unpreserved (EA055) CH1, CH2a, HC, CZ, NNBD, CC, NEC, SCB, NEC1a, NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,		CH2, SB1a, WB, NNB, NNBDU, WC, NB, KB, NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b	24-Oct-2025	----	----	----	05-Nov-2025	07-Nov-2025	✓
Soil Glass Jar - Unpreserved (EA055) CH6,		CH7	25-Oct-2025	----	----	----	05-Nov-2025	08-Nov-2025	✓
Soil Glass Jar - Unpreserved (EA055) CH3, CH5, DO1, DO4, DO5, DO7, SS12		CH4, DO3, DO2, DO4a, DO6, DO7a,	26-Oct-2025	----	----	----	05-Nov-2025	09-Nov-2025	✓
Soil Glass Jar - Unpreserved (EA055) SS10,		SS11	28-Oct-2025	----	----	----	05-Nov-2025	11-Nov-2025	✓
Soil Glass Jar - Unpreserved (EA055) SS01, SS03, SS05,		SS02, SS04, SS09	29-Oct-2025	----	----	----	05-Nov-2025	12-Nov-2025	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED040T : Total Sulfate by ICPAES								
Soil Glass Jar - Unpreserved (ED040T)		24-Oct-2025	05-Nov-2025	31-Oct-2025		11-Nov-2025	03-Dec-2025	
SB1a,	HC,							
WB,	CZ,							
NNB,	NNBD,							
NNBDU,	CC,							
WC,	NEC,							
NB,	SCB,							
KB								
Soil Glass Jar - Unpreserved (ED040T)		26-Oct-2025	05-Nov-2025	02-Nov-2025		11-Nov-2025	03-Dec-2025	
DO3,	DO1,							
DO2,	DO4,							
DO4a,	DO5,							
DO6,	DO7,							
DO7a								
ED042T: Total Sulfur by LECO								
Pulp Bag (ED042T)		24-Oct-2025	07-Nov-2025	22-Apr-2026		10-Nov-2025	22-Apr-2026	
SB1a,	HC,							
WB,	CZ,							
NNB,	NNBD,							
NNBDU,	CC,							
WC,	NEC,							
NB,	SCB,							
KB								
Pulp Bag (ED042T)		26-Oct-2025	07-Nov-2025	24-Apr-2026		10-Nov-2025	24-Apr-2026	
DO3,	DO1,							
DO2,	DO4,							
DO4a,	DO5,							
DO6,	DO7,							
DO7a								

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Matrix: **SOIL** Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG005(ED093)T: Total Metals by ICP-AES									
Soil Glass Jar - Unpreserved (EG005T) NNB, NEC1a		NNBD,	24-Oct-2025	06-Nov-2025	22-Apr-2026	✔	10-Nov-2025	22-Apr-2026	✔
Soil Glass Jar - Unpreserved (EG005T) NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b		NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,	24-Oct-2025	07-Nov-2025	22-Apr-2026	✔	11-Nov-2025	22-Apr-2026	✔
Soil Glass Jar - Unpreserved (EG005T) SS12			26-Oct-2025	07-Nov-2025	24-Apr-2026	✔	11-Nov-2025	24-Apr-2026	✔
Soil Glass Jar - Unpreserved (EG005T) SS10,		SS11	28-Oct-2025	07-Nov-2025	26-Apr-2026	✔	11-Nov-2025	26-Apr-2026	✔
Soil Glass Jar - Unpreserved (EG005T) SS01, SS03, SS05,		SS02, SS04, SS09	29-Oct-2025	07-Nov-2025	27-Apr-2026	✔	11-Nov-2025	27-Apr-2026	✔

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Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD) CH1, CH2, CH2a, SB1, SB1a, SB3, SB4, SB5		24-Oct-2025	05-Nov-2025	22-Apr-2026	✓	07-Nov-2025	22-Apr-2026	✓
Soil Glass Jar - Unpreserved (EG020-SD) SB12, HC, WB, CZ, NNB, NNBD, NNBDU, CC, WC, NEC, NB, SCB, KB, NEC1a		24-Oct-2025	06-Nov-2025	22-Apr-2026	✓	07-Nov-2025	22-Apr-2026	✓
Soil Glass Jar - Unpreserved (EG020-SD) NEC1b, NEC2a, NEC2b, NEC3a, NEC3b, NEC4a, NEC4b, NEC5a, NEC5b, NEC6a, NEC6b		24-Oct-2025	07-Nov-2025	22-Apr-2026	✓	07-Nov-2025	22-Apr-2026	✓
Soil Glass Jar - Unpreserved (EG020-SD) CH6, CH7		25-Oct-2025	05-Nov-2025	23-Apr-2026	✓	07-Nov-2025	23-Apr-2026	✓
Soil Glass Jar - Unpreserved (EG020-SD) CH3, CH4, CH5, SB2, DO3, DO1, DO2		26-Oct-2025	05-Nov-2025	24-Apr-2026	✓	07-Nov-2025	24-Apr-2026	✓
Soil Glass Jar - Unpreserved (EG020-SD) DO4, DO4a, DO5, DO6, DO7, DO7a		26-Oct-2025	06-Nov-2025	24-Apr-2026	✓	07-Nov-2025	24-Apr-2026	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035E: 1M HCl extractable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035E)		24-Oct-2025	07-Nov-2025	21-Nov-2025	✓	10-Nov-2025	21-Nov-2025	✓
HC,	WB,							
CZ,	NNB,							
NNBD,	NNBDU,							
CC,	WC,							
NEC,	NB,							
SCB,	KB,							
NEC1a,	NEC1b,							
NEC2a,	NEC2b,							
NEC3a,	NEC3b,							
NEC4a,	NEC4b,							
NEC5a,	NEC5b,							
NEC6a,	NEC6b,							

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Matrix: SOIL		Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.							
Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG035T: Total Recoverable Mercury by FIMS									
Soil Glass Jar - Unpreserved (EG035T-LL)	WB, CZ, NNBD, CC, NEC, SCB, NEC1a	24-Oct-2025	06-Nov-2025	21-Nov-2025	✔	07-Nov-2025	21-Nov-2025	✔	
Soil Glass Jar - Unpreserved (EG035T-LL)	NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,	24-Oct-2025	07-Nov-2025	21-Nov-2025	✔	07-Nov-2025	21-Nov-2025	✔	
Soil Glass Jar - Unpreserved (EG035T-LL)	DO3, DO2	26-Oct-2025	05-Nov-2025	23-Nov-2025	✔	07-Nov-2025	23-Nov-2025	✔	
Soil Glass Jar - Unpreserved (EG035T-LL)	DO4a, DO6, DO7a	26-Oct-2025	06-Nov-2025	23-Nov-2025	✔	07-Nov-2025	23-Nov-2025	✔	
Soil Glass Jar - Unpreserved (EG035T)	SS12	26-Oct-2025	07-Nov-2025	23-Nov-2025	✔	07-Nov-2025	23-Nov-2025	✔	
Soil Glass Jar - Unpreserved (EG035T)	SS11	28-Oct-2025	07-Nov-2025	25-Nov-2025	✔	07-Nov-2025	25-Nov-2025	✔	
Soil Glass Jar - Unpreserved (EG035T)	SS02, SS04, SS09	29-Oct-2025	07-Nov-2025	26-Nov-2025	✔	07-Nov-2025	26-Nov-2025	✔	
EG036: Methyl Mercury									
Soil Glass Jar - Unpreserved (EG036)	NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b	24-Oct-2025	----	----	----	10-Nov-2025	03-Dec-2025	✔	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Soil Glass Jar - Unpreserved (EK059G)	NNBD, NNBDU, SCB	24-Oct-2025	07-Nov-2025	21-Nov-2025	✔	07-Nov-2025	09-Nov-2025	✔	

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Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Soil Glass Jar - Unpreserved (EK061G)		24-Oct-2025	05-Nov-2025	21-Nov-2025	✓	10-Nov-2025	03-Dec-2025	✓
NNB,	NNBD,							
NNBDU,	SCB							
EK067G: Total Phosphorus as P by Discrete Analyser								
Soil Glass Jar - Unpreserved (EK067G)		24-Oct-2025	05-Nov-2025	21-Nov-2025	✓	10-Nov-2025	03-Dec-2025	✓
NNB,	NNBD,							
NNBDU,	SCB							
EP003: Total Organic Carbon (TOC) in Soil								
Pulp Bag (EP003)		24-Oct-2025	07-Nov-2025	21-Nov-2025	✓	10-Nov-2025	21-Nov-2025	✓
CH1,	CH2,							
CH2a,	SB1a,							
HC,	WB,							
CZ,	NNB,							
NNBD,	NNBDU,							
CC,	WC,							
NEC,	NB,							
SCB,	KB,							
NEC1a,	NEC1b,							
NEC2a,	NEC2b,							
NEC3a,	NEC3b,							
NEC4a,	NEC4b,							
NEC5a,	NEC5b,							
NEC6a,	NEC6b							
Pulp Bag (EP003)		25-Oct-2025	07-Nov-2025	22-Nov-2025	✓	10-Nov-2025	22-Nov-2025	✓
CH6,	CH7							
Pulp Bag (EP003)		26-Oct-2025	07-Nov-2025	23-Nov-2025	✓	10-Nov-2025	23-Nov-2025	✓
CH3,	CH4,							
CH5,	DO3,							
DO1,	DO2,							
DO4,	DO4a,							
DO5,	DO6,							
DO7,	DO7a							

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)A: Phenolic Compounds									
Soil Glass Jar - Unpreserved (EP075(SIM)) NNB, NEC1a		NNBD,	24-Oct-2025	05-Nov-2025	07-Nov-2025	✓	06-Nov-2025	15-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b		NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	06-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) SS12			26-Oct-2025	06-Nov-2025	09-Nov-2025	✓	06-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) SS10,		SS11	28-Oct-2025	06-Nov-2025	11-Nov-2025	✓	06-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) SS01, SS03, SS05,		SS02, SS04, SS09	29-Oct-2025	06-Nov-2025	12-Nov-2025	✓	06-Nov-2025	16-Dec-2025	✓

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Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071-SD) CH1, CH2a, NEC2a, NEC3a, NEC4a,	CH2, NEC1b, NEC2b, NEC3b, NEC4b	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	07-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) SB1a, WB, NEC5b, NEC6b	HC, NEC5a, NEC6a,	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CZ, NNBD, CC, NEC, SCB, NEC1a	NNB, NNBDU, WC, NB, KB,	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	10-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CH6,	CH7	25-Oct-2025	06-Nov-2025	08-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CH3, CH5	CH4,	26-Oct-2025	06-Nov-2025	09-Nov-2025	✓	07-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) DO3, DO2, DO4a, DO6, DO7a,	DO1, DO4, DO5, DO7, SS12	26-Oct-2025	06-Nov-2025	09-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) SS10,	SS11	28-Oct-2025	06-Nov-2025	11-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) SS01, SS03, SS05,	SS02, SS04, SS09	29-Oct-2025	06-Nov-2025	12-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓

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Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080-SD) CH1, CH2a, HC, CZ	CH2, SB1a, WB,	24-Oct-2025	04-Nov-2025	07-Nov-2025	✓	05-Nov-2025	07-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) NNB, NNBDU, WC, NB, KB, NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b	NNBD, CC, NEC, SCB, NEC1a, NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,	24-Oct-2025	04-Nov-2025	07-Nov-2025	✓	06-Nov-2025	07-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CH1, CH2a, NEC2a, NEC3a, NEC4a,	CH2, NEC1b, NEC2b, NEC3b, NEC4b	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	07-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) SB1a, WB, NEC5b, NEC6b	HC, NEC5a, NEC6a,	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CZ, NNBD, CC, NEC, SCB, NEC1a	NNB, NNBDU, WC, NB, KB,	24-Oct-2025	06-Nov-2025	07-Nov-2025	✓	10-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) CH6,	CH7	25-Oct-2025	04-Nov-2025	08-Nov-2025	✓	05-Nov-2025	08-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CH6,	CH7	25-Oct-2025	06-Nov-2025	08-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD)								

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Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons - Continued								
CH3, CH5, DO1, DO4, DO5, DO7,	CH4, DO3, DO2, DO4a, DO6, DO7a	26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	05-Nov-2025	09-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) SS12		26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	06-Nov-2025	09-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) CH3, CH5	CH4,	26-Oct-2025	06-Nov-2025	09-Nov-2025	✓	07-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) DO3, DO2, DO4a, DO6, DO7a,	DO1, DO4, DO5, DO7, SS12	26-Oct-2025	06-Nov-2025	09-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) SS10,	SS11	28-Oct-2025	04-Nov-2025	11-Nov-2025	✓	06-Nov-2025	11-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) SS10,	SS11	28-Oct-2025	06-Nov-2025	11-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) SS01, SS03, SS05,	SS02, SS04, SS09	29-Oct-2025	04-Nov-2025	12-Nov-2025	✓	06-Nov-2025	12-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP071-SD) SS01, SS03, SS05,	SS02, SS04, SS09	29-Oct-2025	06-Nov-2025	12-Nov-2025	✓	08-Nov-2025	16-Dec-2025	✓

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Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons									
Soil Glass Jar - Unpreserved (EP080-SD) CH1, CH2a, HC, CZ		CH2, SB1a, WB,	24-Oct-2025	04-Nov-2025	07-Nov-2025	✓	05-Nov-2025	07-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) NNB, NNBDU, WC, NB, KB, NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b		NNBD, CC, NEC, SCB, NEC1a, NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,	24-Oct-2025	04-Nov-2025	07-Nov-2025	✓	06-Nov-2025	07-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) CH6,		CH7	25-Oct-2025	04-Nov-2025	08-Nov-2025	✓	05-Nov-2025	08-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) CH3, CH5, DO1, DO4, DO5, DO7,		CH4, DO3, DO2, DO4a, DO6, DO7a	26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	05-Nov-2025	09-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) SS12			26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	06-Nov-2025	09-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) SS10,		SS11	28-Oct-2025	04-Nov-2025	11-Nov-2025	✓	06-Nov-2025	11-Nov-2025	✓
Soil Glass Jar - Unpreserved (EP080-SD) SS01, SS03, SS05,		SS02, SS04, SS09	29-Oct-2025	04-Nov-2025	12-Nov-2025	✓	06-Nov-2025	12-Nov-2025	✓

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Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD)								
CH1, CH2a, HC, CZ	CH2, SB1a, WB,	24-Oct-2025	04-Nov-2025	07-Nov-2025	✔	05-Nov-2025	07-Nov-2025	✔
Soil Glass Jar - Unpreserved (EP080-SD)								
NNB, NNBDU, WC, NB, KB, NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b	NNBD, CC, NEC, SCB, NEC1a, NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,	24-Oct-2025	04-Nov-2025	07-Nov-2025	✔	06-Nov-2025	07-Nov-2025	✔
Soil Glass Jar - Unpreserved (EP080-SD)								
CH6,	CH7	25-Oct-2025	04-Nov-2025	08-Nov-2025	✔	05-Nov-2025	08-Nov-2025	✔
Soil Glass Jar - Unpreserved (EP080-SD)								
CH3, CH5, DO1, DO4, DO5, DO7,	CH4, DO3, DO2, DO4a, DO6, DO7a	26-Oct-2025	04-Nov-2025	09-Nov-2025	✔	05-Nov-2025	09-Nov-2025	✔
Soil Glass Jar - Unpreserved (EP080-SD)								
SS12		26-Oct-2025	04-Nov-2025	09-Nov-2025	✔	06-Nov-2025	09-Nov-2025	✔
Soil Glass Jar - Unpreserved (EP080-SD)								
SS10,	SS11	28-Oct-2025	04-Nov-2025	11-Nov-2025	✔	06-Nov-2025	11-Nov-2025	✔
Soil Glass Jar - Unpreserved (EP080-SD)								
SS01, SS03, SS05,	SS02, SS04, SS09	29-Oct-2025	04-Nov-2025	12-Nov-2025	✔	06-Nov-2025	12-Nov-2025	✔

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Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP132B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP132B-SD)		24-Oct-2025	06-Nov-2025	07-Nov-2025	✔	10-Nov-2025	16-Dec-2025	✔
CH1,	CH2,							
SB1,	SB3,							
SB4,	SB5,							
SB12,	NNB,							
NNBD,	NEC1a,							
NEC1b,	NEC2a,							
NEC2b,	NEC3a,							
NEC3b,	NEC4a,							
NEC4b								
Soil Glass Jar - Unpreserved (EP132B-SD)		24-Oct-2025	06-Nov-2025	07-Nov-2025	✔	11-Nov-2025	16-Dec-2025	✔
NEC5a,	NEC5b,							
NEC6a,	NEC6b							
Soil Glass Jar - Unpreserved (EP132B-SD)		25-Oct-2025	06-Nov-2025	08-Nov-2025	✔	10-Nov-2025	16-Dec-2025	✔
CH6,	CH7							
Soil Glass Jar - Unpreserved (EP132B-SD)		26-Oct-2025	06-Nov-2025	09-Nov-2025	✔	10-Nov-2025	16-Dec-2025	✔
CH3,	CH4,							
CH5,	SB2							
Soil Glass Jar - Unpreserved (EP132B-SD)		26-Oct-2025	06-Nov-2025	09-Nov-2025	✔	11-Nov-2025	16-Dec-2025	✔
SS12								
Soil Glass Jar - Unpreserved (EP132B-SD)		28-Oct-2025	06-Nov-2025	11-Nov-2025	✔	11-Nov-2025	16-Dec-2025	✔
SS10,	SS11							
Soil Glass Jar - Unpreserved (EP132B-SD)		29-Oct-2025	06-Nov-2025	12-Nov-2025	✔	11-Nov-2025	16-Dec-2025	✔
SS01,	SS02,							
SS03,	SS04,							
SS05,	SS09							



Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)	NNBD,	24-Oct-2025	04-Nov-2025	22-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
NNB,	WC,							
NEC1a,	NEC,							
NEC2a,	NEC1b,							
NEC3a,	NEC2b,							
NEC4a,	NEC3b,							
NEC5a,	NEC4b,							
NEC6a,	NEC5b,							
	NEC6b							
HDPE Soil Jar (EP231X)		26-Oct-2025	04-Nov-2025	24-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
SS12								
HDPE Soil Jar (EP231X)	SS11	28-Oct-2025	04-Nov-2025	26-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
SS10,								
HDPE Soil Jar (EP231X)	SS02,	29-Oct-2025	04-Nov-2025	27-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
SS01,	SS04,							
SS03,	SS09							
SS05,								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)	NNBD,	24-Oct-2025	04-Nov-2025	22-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
NNB,	WC,							
NEC1a,	NEC,							
NEC2a,	NEC1b,							
NEC3a,	NEC2b,							
NEC4a,	NEC3b,							
NEC5a,	NEC4b,							
NEC6a,	NEC5b,							
	NEC6b							
HDPE Soil Jar (EP231X)		26-Oct-2025	04-Nov-2025	24-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
SS12								
HDPE Soil Jar (EP231X)	SS11	28-Oct-2025	04-Nov-2025	26-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
SS10,								
HDPE Soil Jar (EP231X)	SS02,	29-Oct-2025	04-Nov-2025	27-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
SS01,	SS04,							
SS03,	SS09							
SS05,								

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Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP231C: Perfluoroalkyl Sulfonamides									
HDPE Soil Jar (EP231X) NNB, WC, NEC1a, NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,		NNBD, NEC, NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b	24-Oct-2025	04-Nov-2025	22-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
HDPE Soil Jar (EP231X) SS12			26-Oct-2025	04-Nov-2025	24-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
HDPE Soil Jar (EP231X) SS10,		SS11	28-Oct-2025	04-Nov-2025	26-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
HDPE Soil Jar (EP231X) SS01, SS03, SS05,		SS02, SS04, SS09	29-Oct-2025	04-Nov-2025	27-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
HDPE Soil Jar (EP231X) NNB, WC, NEC1a, NEC2a, NEC3a, NEC4a, NEC5a, NEC6a,		NNBD, NEC, NEC1b, NEC2b, NEC3b, NEC4b, NEC5b, NEC6b	24-Oct-2025	04-Nov-2025	22-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
HDPE Soil Jar (EP231X) SS12			26-Oct-2025	04-Nov-2025	24-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
HDPE Soil Jar (EP231X) SS10,		SS11	28-Oct-2025	04-Nov-2025	26-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓
HDPE Soil Jar (EP231X) SS01, SS03, SS05,		SS02, SS04, SS09	29-Oct-2025	04-Nov-2025	27-Apr-2026	✓	04-Nov-2025	14-Dec-2025	✓

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Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)		24-Oct-2025	04-Nov-2025	22-Apr-2026	✔	04-Nov-2025	14-Dec-2025	✔
NNB,	NNBD,							
WC,	NEC,							
NEC1a,	NEC1b,							
NEC2a,	NEC2b,							
NEC3a,	NEC3b,							
NEC4a,	NEC4b,							
NEC5a,	NEC5b,							
NEC6a,	NEC6b,							
HDPE Soil Jar (EP231X)		26-Oct-2025	04-Nov-2025	24-Apr-2026	✔	04-Nov-2025	14-Dec-2025	✔
SS12								
HDPE Soil Jar (EP231X)	SS11	28-Oct-2025	04-Nov-2025	26-Apr-2026	✔	04-Nov-2025	14-Dec-2025	✔
SS10,								
HDPE Soil Jar (EP231X)	SS02,	29-Oct-2025	04-Nov-2025	27-Apr-2026	✔	04-Nov-2025	14-Dec-2025	✔
SS01,	SS04,							
SS03,	SS09							
SS05,								
EP262: Ethanolamines								
Soil Glass Jar - Unpreserved (EP262)		24-Oct-2025	----	----	----	06-Nov-2025	07-Nov-2025	✔
NNB,	NNBD,							
NNBDU,	NEC,							
SCB								
Soil Glass Jar - Unpreserved (EP262)	DO2,	26-Oct-2025	----	----	----	06-Nov-2025	09-Nov-2025	✔
DO1,	DO4a,							
DO4,	DO6,							
DO5,	DO7a							
DO7,								
Soil Glass Jar - Unpreserved (EP262)		26-Oct-2025	----	----	----	07-Nov-2025	09-Nov-2025	✔
DO3								

Matrix: **WATER** Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

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Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P) SW12, NNBD	NNB,	26-Oct-2025	----	----	----	06-Nov-2025	09-Nov-2025	✓
Clear Plastic Bottle - Natural (ED037-P) SW10, SW13	SW11,	28-Oct-2025	----	----	----	06-Nov-2025	11-Nov-2025	✓
Clear Plastic Bottle - Natural (ED037-P) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	----	----	----	06-Nov-2025	12-Nov-2025	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G) SW12, NNBD	NNB,	26-Oct-2025	----	----	----	11-Nov-2025	23-Nov-2025	✓
Clear Plastic Bottle - Natural (ED041G) SW10, SW13	SW11,	28-Oct-2025	----	----	----	11-Nov-2025	25-Nov-2025	✓
Clear Plastic Bottle - Natural (ED041G) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	----	----	----	11-Nov-2025	26-Nov-2025	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G) SW12, NNBD	NNB,	26-Oct-2025	----	----	----	11-Nov-2025	23-Nov-2025	✓
Clear Plastic Bottle - Natural (ED045G) SW10, SW13	SW11,	28-Oct-2025	----	----	----	11-Nov-2025	25-Nov-2025	✓
Clear Plastic Bottle - Natural (ED045G) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	----	----	----	11-Nov-2025	26-Nov-2025	✓

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Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED093F: Dissolved Major Cations							
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (ED093F) SW12, NNB, NNBD	26-Oct-2025	----	----	----	10-Nov-2025	23-Nov-2025	✓
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (ED093F) SW10, SW11, SW13	28-Oct-2025	----	----	----	10-Nov-2025	25-Nov-2025	✓
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (ED093F) SW01, SW03, SW05, NEC4 SW02, SW04, NEC6,	29-Oct-2025	----	----	----	10-Nov-2025	26-Nov-2025	✓
EG020F: Dissolved Metals by ICP-MS							
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F) SW12, NNB, NNBD	26-Oct-2025	----	----	----	10-Nov-2025	24-Apr-2026	✓
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F) SW10, SW11, SW13	28-Oct-2025	----	----	----	10-Nov-2025	26-Apr-2026	✓
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F) SW01, SW03, SW05, NEC4 SW02, SW04, NEC6,	29-Oct-2025	----	----	----	10-Nov-2025	27-Apr-2026	✓
EG035F: Dissolved Mercury by FIMS							
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F-LL) SW12, NNB, NNBD	26-Oct-2025	----	----	----	20-Nov-2025	23-Nov-2025	✓
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F-LL) SW10, SW11, SW13	28-Oct-2025	----	----	----	20-Nov-2025	25-Nov-2025	✓
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F-LL) SW01, SW03, SW05, NEC4 SW02, SW04, NEC6,	29-Oct-2025	----	----	----	20-Nov-2025	26-Nov-2025	✓

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Matrix: WATER		Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.						
Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG050G LL-F: Dissolved Hexavalent Chromium by Discrete Analyser - Low Level								
Clear Plastic Bottle - NaOH (EG050G LL-F) SW12,	NNBD	26-Oct-2025	----	----	----	12-Nov-2025	23-Nov-2025	✔
Clear Plastic Bottle - NaOH Filtered (EG050G LL-F) NNB		26-Oct-2025	----	----	----	12-Nov-2025	23-Nov-2025	✔
Clear Plastic Bottle - NaOH Filtered (EG050G LL-F) SW10,	SW11	28-Oct-2025	----	----	----	11-Nov-2025	25-Nov-2025	✔
Clear Plastic Bottle - NaOH Filtered (EG050G LL-F) SW13		28-Oct-2025	----	----	----	12-Nov-2025	25-Nov-2025	✔
Clear Plastic Bottle - NaOH Filtered (EG050G LL-F) SW01, SW03, SW05	SW02, SW04,	29-Oct-2025	----	----	----	11-Nov-2025	26-Nov-2025	✔
Clear Plastic Bottle - NaOH Filtered (EG050G LL-F) NEC6,	NEC4	29-Oct-2025	----	----	----	12-Nov-2025	26-Nov-2025	✔
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG093A-F) SW12, NNBD	NNB,	26-Oct-2025	----	----	----	04-Nov-2025	24-Apr-2026	✔
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG093A-F) SW13		28-Oct-2025	----	----	----	04-Nov-2025	26-Apr-2026	✔
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG093A-F) SW01, SW03, SW05,	SW02, SW04, NEC6	29-Oct-2025	----	----	----	04-Nov-2025	27-Apr-2026	✔
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094A-F) SW10,	SW11	28-Oct-2025	----	----	----	05-Nov-2025	26-Apr-2026	✔
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094A-F) NEC4		29-Oct-2025	----	----	----	05-Nov-2025	27-Apr-2026	✔
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
Amber Glass Bottle - Unpreserved (EP071SG) SW12, NNBD	NNB,	26-Oct-2025	04-Nov-2025	02-Nov-2025	✖	07-Nov-2025	14-Dec-2025	✔
Amber Glass Bottle - Unpreserved (EP071SG) SW10, SW13	SW11,	28-Oct-2025	04-Nov-2025	04-Nov-2025	✔	07-Nov-2025	14-Dec-2025	✔
Amber Glass Bottle - Unpreserved (EP071SG) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	04-Nov-2025	05-Nov-2025	✔	07-Nov-2025	14-Dec-2025	✔

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Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup							
Amber Glass Bottle - Unpreserved (EP071SG) SW12, NNB, NNBD	26-Oct-2025	04-Nov-2025	02-Nov-2025	✖	07-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP071SG) SW10, SW13	28-Oct-2025	04-Nov-2025	04-Nov-2025	✓	07-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP071SG) SW01, SW03, SW05, NEC4	29-Oct-2025	04-Nov-2025	05-Nov-2025	✓	07-Nov-2025	14-Dec-2025	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW12, NNB, NNBD	26-Oct-2025	04-Nov-2025	02-Nov-2025	✖	05-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW10, SW13	28-Oct-2025	04-Nov-2025	04-Nov-2025	✓	05-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW01, SW03, SW05, NEC4	29-Oct-2025	04-Nov-2025	05-Nov-2025	✓	05-Nov-2025	14-Dec-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW12, NNB, NNBD	26-Oct-2025	04-Nov-2025	02-Nov-2025	✖	05-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW10, SW13	28-Oct-2025	04-Nov-2025	04-Nov-2025	✓	05-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW01, SW03, SW05, NEC4	29-Oct-2025	04-Nov-2025	05-Nov-2025	✓	05-Nov-2025	14-Dec-2025	✓

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Matrix: **WATER** Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) SW12, NNBD	NNB,	26-Oct-2025	04-Nov-2025	02-Nov-2025	✖	06-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP071) SW10, SW13	SW11,	28-Oct-2025	04-Nov-2025	04-Nov-2025	✓	06-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP071) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	04-Nov-2025	05-Nov-2025	✓	06-Nov-2025	14-Dec-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW12, NNBD	NNB,	26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	04-Nov-2025	09-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW10, SW13	SW11,	28-Oct-2025	04-Nov-2025	11-Nov-2025	✓	04-Nov-2025	11-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	04-Nov-2025	12-Nov-2025	✓	04-Nov-2025	12-Nov-2025	✓

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Matrix: **WATER** Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SW12, NNB, NNBD	26-Oct-2025	04-Nov-2025	02-Nov-2025	✖	06-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP071) SW10, SW13	28-Oct-2025	04-Nov-2025	04-Nov-2025	✓	06-Nov-2025	14-Dec-2025	✓
Amber Glass Bottle - Unpreserved (EP071) SW01, SW03, SW05, NEC4	29-Oct-2025	04-Nov-2025	05-Nov-2025	✓	06-Nov-2025	14-Dec-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW12, NNBD	26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	04-Nov-2025	09-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW10, SW13	28-Oct-2025	04-Nov-2025	11-Nov-2025	✓	04-Nov-2025	11-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW01, SW03, SW05, NEC4	29-Oct-2025	04-Nov-2025	12-Nov-2025	✓	04-Nov-2025	12-Nov-2025	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SW12, NNBD	26-Oct-2025	04-Nov-2025	09-Nov-2025	✓	04-Nov-2025	09-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW10, SW13	28-Oct-2025	04-Nov-2025	11-Nov-2025	✓	04-Nov-2025	11-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW01, SW03, SW05, NEC4	29-Oct-2025	04-Nov-2025	12-Nov-2025	✓	04-Nov-2025	12-Nov-2025	✓

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Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X) SW12, NNBD	NNB,	26-Oct-2025	05-Nov-2025	24-Apr-2026	✓	05-Nov-2025	24-Apr-2026	✓
HDPE (no PTFE) (EP231X) SW10, SW13	SW11,	28-Oct-2025	05-Nov-2025	26-Apr-2026	✓	05-Nov-2025	26-Apr-2026	✓
HDPE (no PTFE) (EP231X) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	05-Nov-2025	27-Apr-2026	✓	05-Nov-2025	27-Apr-2026	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X) SW12, NNBD	NNB,	26-Oct-2025	05-Nov-2025	24-Apr-2026	✓	05-Nov-2025	24-Apr-2026	✓
HDPE (no PTFE) (EP231X) SW10, SW13	SW11,	28-Oct-2025	05-Nov-2025	26-Apr-2026	✓	05-Nov-2025	26-Apr-2026	✓
HDPE (no PTFE) (EP231X) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	05-Nov-2025	27-Apr-2026	✓	05-Nov-2025	27-Apr-2026	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X) SW12, NNBD	NNB,	26-Oct-2025	05-Nov-2025	24-Apr-2026	✓	05-Nov-2025	24-Apr-2026	✓
HDPE (no PTFE) (EP231X) SW10, SW13	SW11,	28-Oct-2025	05-Nov-2025	26-Apr-2026	✓	05-Nov-2025	26-Apr-2026	✓
HDPE (no PTFE) (EP231X) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	05-Nov-2025	27-Apr-2026	✓	05-Nov-2025	27-Apr-2026	✓

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Matrix: **WATER** Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X) SW12, NNBD	NNB,	26-Oct-2025	05-Nov-2025	24-Apr-2026	✔	05-Nov-2025	24-Apr-2026	✔
HDPE (no PTFE) (EP231X) SW10, SW13	SW11,	28-Oct-2025	05-Nov-2025	26-Apr-2026	✔	05-Nov-2025	26-Apr-2026	✔
HDPE (no PTFE) (EP231X) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	05-Nov-2025	27-Apr-2026	✔	05-Nov-2025	27-Apr-2026	✔
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X) SW12, NNBD	NNB,	26-Oct-2025	05-Nov-2025	24-Apr-2026	✔	05-Nov-2025	24-Apr-2026	✔
HDPE (no PTFE) (EP231X) SW10, SW13	SW11,	28-Oct-2025	05-Nov-2025	26-Apr-2026	✔	05-Nov-2025	26-Apr-2026	✔
HDPE (no PTFE) (EP231X) SW01, SW03, SW05, NEC4	SW02, SW04, NEC6,	29-Oct-2025	05-Nov-2025	27-Apr-2026	✔	05-Nov-2025	27-Apr-2026	✔



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification .

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
1 M HCl Extractable Mercury by FIMS	EG035E	3	24	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Methyl Mercury in Soil by IC/ICPMS	EG036	4	15	26.67	20.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	6	51	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	26	11.54	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	30	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate as SO4 2- Total	ED040T	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfur - Total as S (LECO)	ED042T	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	9	22.22	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	5	34	14.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	8	48	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	5	42	11.90	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	6	51	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	6	51	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
1 M HCl Extractable Mercury by FIMS	EG035E	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Methyl Mercury in Soil by IC/ICPMS	EG036	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate as SO4 2- Total	ED040T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfur - Total as S (LECO)	ED042T	4	22	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	15	13.33	15.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	3	34	8.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	3	48	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	6	42	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	2	9	22.22	10.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL** Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Control Samples (LCS) - Continued							
TPH - Semivolatile Fraction	EP071-SD	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
1 M HCl Extractable Mercury by FIMS	EG035E	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Methyl Mercury in Soil by IC/ICPMS	EG036	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate as SO4 2- Total	ED040T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfur - Total as S (LECO)	ED042T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	3	34	8.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	3	48	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
1 M HCl Extractable Mercury by FIMS	EG035E	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Methyl Mercury in Soil by IC/ICPMS	EG036	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	3	34	8.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	4	48	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fraction	EP071-SD	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER** Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

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 Project : 25ENV445



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Hexavalent Chromium by DA - Low Level	EG050G LL-F	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS - Low Level	EG035F-LL	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	3	24	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	1	14	7.14	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Hexavalent Chromium by DA - Low Level	EG050G LL-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS - Low Level	EG035F-LL	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Hexavalent Chromium by DA - Low Level	EG050G LL-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS - Low Level	EG035F-LL	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Hexavalent Chromium by DA - Low Level	EG050G LL-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS - Low Level	EG035F-LL	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	0	14	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Sulfate as SO ₄ 2- Total	ED040T	SOIL	In house: Total Sulfate is determined off a HCl digestion by ICPAES as S , and reported as SO ₄
Sulfur - Total as S (LECO)	ED042T	SOIL	In house: Dried and pulverised sample is combusted in a high temperature furnace in the presence of strong oxidants / catalysts. The evolved S (as SO ₂) is measured by infra-red detector
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Metals in Sediments by ICPMS	EG020-SD	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG.
1 M HCl Extractable Mercury by FIMS	EG035E	SOIL	In house: Referenced to Allen HE 1993 - The significance of trace metal speciation for water, sediment and soil criteria and standards, Science of the Total Environment Supplement, 23-45.) (FIMS) 1 M HCl extractable metals are determined following an extraction of the soil.
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Methyl Mercury in Soil by IC/ICPMS	EG036	SOIL	In house
Nitrite and Nitrate as N (NO _x)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Thermo Scientific Method D08727 and NEMI (National Environmental Method Index) Method ID: 9171. This method covers the determination of total oxidised nitrogen (NO _x -N) and nitrate (NO ₃ -N) by calculation, Combined oxidised Nitrogen (NO ₂ +NO ₃) in a water extract is determined by direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NO _x) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO ₃ - Total Nitrogen is determined as the sum of TKN and Oxidised Nitrogen, each determined separately as N.
Total Phosphorus By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500 P-B&F This procedure involves sulfuric acid digestion and quantification using Discrete Analyser.



Analytical Methods	Method	Matrix	Method Descriptions
Sulfide as S	* EK085T	SOIL	In-house. Sulfide in a soil is determined as the difference between Total Sulfur (Leco) and Sulfate.
Total Organic Carbon	EP003	SOIL	In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO ₂) is automatically measured by infra-red detector.
TPH - Semivolatile Fraction	EP071-SD	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX in Sediments	EP080-SD	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
PAHs in Sediments by GCMS(SIM)	EP132B-SD	SOIL	In house: Referenced to USEPA 8270 GCMS Capillary column, SIM mode using large volume programmed temperature vaporisation injection.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by negative mode LC-ESI-MS/MS using MRM and isotope dilution or internal standard quantitation. A portion of homogenised sample is extracted along with isotope dilution standards (where commercially available) in a solution of ammonium acetate in acetonitrile/methanol. Where relevant, interferences from co-extracted organics are removed using dispersive clean-up media (dSPE). A portion of extract is combined with an equal volume of reagent water and filtered for instrumental analysis.
Ethanolamines in Soils	EP262	SOIL	In House: 2g of soil is extracted into 10 mL of water then analysed by analysed by LC/MSMS in ESI Positive Mode.
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. Auto Titrator) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO ₄ 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO ₄ . Dissolved sulfate is determined in a 0.45µm filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO ₄ suspension is measured by a photometer and the SO ₄ -2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS - Low Level	EG035F-LL	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Dissolved Trivalent Chromium by DA - Low Level	EG049G LL-F	WATER	In house: Referenced to APHA 3500 Cr-B & 3120/3125. Trivalent Chromium is the difference between Total Chromium and Hexavalent Chromium.
Dissolved Hexavalent Chromium by DA - Low Level	EG050G LL-F	WATER	In house: Referenced to APHA 3500 Cr-A & B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM Schedule B(3).
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM Schedule B(3).
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM Schedule B(3).
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM Schedule B(3).
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030E. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH - Total Recoverable Hydrocarbons - Silica Gel Cleanup	EP071SG	WATER	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM Schedule B(3).



Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by solid phase extraction (SPE) followed by negative mode LC-ESI-MS/MS using MRM and isotope dilution or internal standard quantitation. Isotope dilution standards (where commercially available) and surrogates are added to the sample container. The entire contents are transferred to a weak anion exchange (WAX) solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Data quality objectives for internal standard recoveries are based on US EPA method 1633.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
HCl Digest	EN24	SOIL	1g of soil is digested in 30 ml of 30% HCl and the resultant digest bulked and filtered for analysis by ICP.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
1M HCl Extraction for Metals in Sediments (1 hour)	EN71/1	SOIL	In house: Referenced to Allen (1993). 1g of sample is leached at room temperature for 1 hour in 10% hydrochloric acid. The resultant extract is filtered and bulked for analysis of extracted metals.
Dry and Pulverise (up to 100g)	GEO30	SOIL	#
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids for LVI (Non-concentrating)	ORG17D	SOIL	In house: 10g of sample, Na2SO4 and surrogate are extracted with 50mL 1:1 DCM/Acetone by end over end tumbling. An aliquot is concentrated by nitrogen blowdown to a reduced volume for analysis if required.
QuEChERS Extraction of Solids	* ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

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Work Order : EP2518235 Amendment 1
Client : WA MARINE PTY LTD
Project : 25ENV445



Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	* ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.



Marine and Freshwater Research Laboratory

Tel: 08 93602907 Address: 90 South St, Murdoch, WA, 6150



Accreditation Number: 10603
Accredited for compliance with ISO/IEC 17025 - Testing.



BIOTA DATA

Contact: Samuel Billinghamurst
Customer: O2 Marine
Address: Level 1, 11 Mews Rd, Fremantle, WA, 6160

Date of Issue: 5/12/2025
Date Received: 31/10/2025
Our Reference: O2M25-30
Your Reference: 25ENV-445

METHOD SAMPLE CODE	Sampling Date	Sample Type	ICP003 Total Ext Cd mg/kg	ICP003 Total Ext Cr mg/kg	ICP003 Total Ext Cu mg/kg	ICP003 Total Ext Ni mg/kg	ICP003 Total Ext Pb mg/kg	ICP003 Total Ext Zn mg/kg	ICP008 Total Ext Hg mg/kg	Moisture %
Reporting Limit			<0.02	<0.1	<0.04	<0.2	<0.2	<0.4	<0.002	<0.1
Analysis Date			11/11/2025	11/11/2025	11/11/2025	11/11/2025	11/11/2025	11/11/2025	18/11/2025	31/10/2025
File			25111101	25111101	25111101	25111101	25111101	25111101	25111802-120202	251031
MW WB	29/10/2025	Biota	0.13	1.4	39	0.6	<0.2	18	0.015	
MW C2	25/10/2025	Biota	0.13	1.8	11	0.8	<0.2	17	0.007	
MW NNB	26/10/2025	Biota	0.06	1.1	11	0.4	<0.2	23	0.006	
MW CC	27/10/2025	Biota	0.24	0.9	16	1.4	<0.2	12	0.011	
MW WC	24/10/2025	Biota	0.30	0.9	9.1	1.5	<0.2	14	0.015	
MW NEC	29/10/2025	Biota	0.06	0.7	28	0.3	<0.2	15	0.013	
DO1	28/10/2025	Biota							0.013	77%
DO2	28/10/2025	Biota							0.013	75%
S1	28/10/2025	Biota	0.39	0.5	220	0.4	<0.2	710		
S5	28/10/2025	Biota	0.50	0.4	170	0.4	<0.2	680		
S7	28/10/2025	Biota	0.48	0.3	180	0.4	<0.2	610		
S8	28/10/2025	Biota	0.49	0.3	170	0.4	<0.2	640		
WC	24/10/2025	Biota	2.5	0.5	17	0.3	<0.2	59		
CC	27/10/2025	Biota	1.2	0.7	13	0.3	<0.2	40		
HC	25/10/2025	Biota	1.2	0.3	14	0.3	<0.2	47		
NB	25/10/2025	Biota	0.85	0.6	17	0.5	<0.2	71		
CH1	28/10/2025	Biota	0.35	0.3	210	0.3	<0.2	590		
CH2	28/10/2025	Biota	0.38	0.7	170	0.4	<0.2	610		
CH3	28/10/2025	Biota	0.77	0.4	110	0.4	<0.2	810		

Signatory: Lirong Han
Date: 5/12/2025

The results only apply to the sample as received and to the sample tested.
Spare test items will be held for two months unless otherwise requested.

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Marine and Freshwater Research Laboratory

Tel: 08 93602907 Address: 90 South St, Murdoch, WA, 6150



Accreditation Number: 10603
Accredited for compliance with ISO/IEC 17025 - Testing.



BIOTA DATA

Contact: Samuel Billinghamurst
Customer: O2 Marine
Address: Level 1, 11 Mews Rd, Fremantle, WA, 6160

Date of Issue: 5/12/2025
Date Received: 31/10/2025
Our Reference: O2M25-30
Your Reference: 25ENV-445

METHOD SAMPLE CODE	Sampling Date	Sample Type	ICP003 Total Ext Cd mg/kg	ICP003 Total Ext Cr mg/kg	ICP003 Total Ext Cu mg/kg	ICP003 Total Ext Ni mg/kg	ICP003 Total Ext Pb mg/kg	ICP003 Total Ext Zn mg/kg	ICP008 Total Ext Hg mg/kg	Moisture %
Reporting Limit			<0.02	<0.1	<0.04	<0.2	<0.2	<0.4	<0.002	<0.1
Analysis Date			11/11/2025	11/11/2025	11/11/2025	11/11/2025	11/11/2025	11/11/2025	18/11/2025	31/10/2025
File			25111101	25111101	25111101	25111101	25111101	25111101	25111802-120202	251031
CH4	28/10/2025	Biota	0.66	0.3	90	0.5	0.4	760		
CH4A	28/10/2025	Biota	0.63	1.5	89	0.9	<0.2	710		
CH5	28/10/2025	Biota	0.71	1.2	92	0.8	<0.2	580		
CH6	25/10/2025	Biota	1.1	0.4	64	0.3	<0.2	350		
CH7	25/10/2025	Biota	1.3	0.3	34	0.3	<0.2	160		
CH7A	25/10/2025	Biota	1.1	0.4	34	0.3	<0.2	160		

Note: Results expressed as wet weight basis, reporting limits raised due to sample size

For results for compliance purposes uncertainty of measurement (MU) will sometimes affect the interpretation whether the result passes or fails the compliance limit.

Tables for measurement uncertainty are available online at www.mafri.murdoch.edu.au

Signatory: Lirong Han
Date: 5/12/2025

The results only apply to the sample as received and to the sample tested.
Spare test items will be held for two months unless otherwise requested.

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QUALITY ASSURANCE REPORT

Client: MURDOCH UNIVERSITY

NMI QA Report No: MURD03/251118

Sample Matrix: Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
Organics Section								
TRH				N25/019535				N25/019536
TRH C6-C10	NGCMS_1121	25	<25	<25	<25	-	102	100
TRH				N25/019529				N25/019529
TPH C10 - C14	NGCMS_1112	50	<50	<50	<50	-	65	70
TPH C15 - C28	NGCMS_1112	100	<100	570	730	25	90	84
TPH C29 - C36	NGCMS_1112	100	<100	<100	<100	-	-	-
Surrogate: TOL-D8	NGCMS_1121	-	-	105	99	5.9	102	103
PAH				N25/019529				N25/019529
Naphthalene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	64	83
Acenaphthylene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Acenaphthene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Fluorene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	66	102
Phenanthrene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	74	111
Anthracene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Fluoranthene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Pyrene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Benzo[a]anthracene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Chrysene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	102	98
Benzo[b]&[k]fluoranthene	NGCMS_1111	1	<1	<0.02	<0.02	-	-	-
Benzo[a]pyrene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	95	65
Indeno[1_2_3-cd]pyrene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Dibenz[ah]anthracene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	87	92
Benzo[ghi]perylene	NGCMS_1111	0.5	<0.5	<0.01	<0.01	-	-	-
Surrogate: TER-D14	NGCMS_1111	-	-	63	71	13	95	98

Results expressed in percentage (%) or mg/kg wherever appropriate.

Acceptable Spike recovery is 70-130% (TRH C6-C10); 50-150% (PAH and TRH >C10-C40)

Maximum acceptable RPDs on spikes and duplicates is 40%.

'NA' = Not Applicable.

RPD= Relative Percentage Difference.

Signed:

Luke Baker
Organics Manager, NMI-North Ryde
3/12/2025

Date:



QUALITY ASSURANCE REPORT

Client: MURDOCH UNIVERSITY

NMI QA Report No: MURD03/251118

Sample Matrix: Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
Organics Section								
TRH				N25/019515				N25/019516
TRH C6-C10	NGCMS_1121	25	<25	<25	<25	-	94	96
TRH				N25/019515				N25/019515
TPH C10 - C14	NGCMS_1112	50	<50	<50	<50	NA	80	64
TPH C15 - C28	NGCMS_1112	100	<100	<100	<100	NA	102	110
TPH C29 - C36	NGCMS_1112	100	<100	<100	<100	NA	-	-
Surrogate: TOL-D8	NGCMS_1121	-	-	102	97	5.0	105	108
PAH				N25/019515				N25/019515
Naphthalene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	66	62
Acenaphthylene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Acenaphthene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Fluorene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	70	84
Phenanthrene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	81	100
Anthracene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Fluoranthene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Pyrene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Benz[a]anthracene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Chrysene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	104	102
Benzo[b]&[k]fluoranthene	NGCMS_1111	0.02	<0.02	<0.02	<0.02	-	-	-
Benzo[a]pyrene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	97	95
Indeno[1_2_3-cd]pyrene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Dibenz[ah]anthracene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	94	89
Benzo[ghi]perylene	NGCMS_1111	0.01	<0.01	<0.01	<0.01	-	-	-
Surrogate: TER-D14	NGCMS_1111	-	-	107	101	6	104	99

Results expressed in percentage (%) or mg/kg wherever appropriate.

Acceptable Spike recovery is 70-130% (TRH C6-C10); 50-150% (PAH and TRH >C10-C40)

Maximum acceptable RPDs on spikes and duplicates is 40%.

'NA' = Not Applicable.

RPD= Relative Percentage Difference.

Signed:

Luke Baker
Organics Manager, NMI-North Ryde
3/12/2025

Date:



REPORT OF ANALYSIS

Page: 1 of 15

Report No. RN1483774

Client :	MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. :	MURD03/251118
Attention :	JAMIE WOODWARD	Quote No. :	QT-02294
Project Name :		Order No. :	PO-023621
For Follow up enquiries :	ASB@measurement.gov.au	Date Received :	18-NOV-2025
		Sampled By :	CLIENT
		Phone :	1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019515	MW WB	MUD WHELK TISSUE
N25/019516	MW C2	MUD WHELK TISSUE
N25/019517	MW NNB	MUD WHELK TISSUE
N25/019518	MW CC	MUD WHELK TISSUE

Lab Reg No.		N25/019515	N25/019516	N25/019517	N25/019518	
Date Sampled		Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference		MW WB	MW C2	MW NNB	MW CC	
	Units					Method
Polycyclic Aromatic Hydrocarbons						
Naphthalene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthylene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluorene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Phenanthrene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluoranthene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benz(a)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Chrysene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg	<0.02	<0.02	<0.02	<0.02	NGCMS_1111
Benzo(a)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Surrogate: TER-D14	%REC	107	93	88	95	NGCMS_1111
Total Petroleum Hydrocarbons						
TPH C6 - C9	mg/kg	<25	<25	<25	<25	NGCMS_1121
TPH C10 - C14	mg/kg	<50	<50	<50	<50	NGCMS_1112
TPH C15 - C28	mg/kg	<100	<100	<100	<100	NGCMS_1112
TPH C29 - C36	mg/kg	<100	<100	<100	<100	NGCMS_1112
Surrogate: TOL-D8	%REC	105	96	101	102	NGCMS_1121
Dates						
Date extracted		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	

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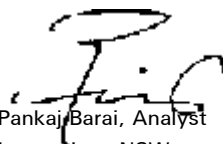
Lab Reg No.	Units	N25/019515	N25/019516	N25/019517	N25/019518	Method
Date Sampled		Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference		MW WB	MW C2	MW NNB	MW CC	



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Lab Reg No.	Units	N25/019515	N25/019516	N25/019517	N25/019518	Method
Date Sampled		Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference		MW WB	MW C2	MW NNB	MW CC	
Date extracted		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed		24-NOV-2025	24-NOV-2025	24-NOV-2025	24-NOV-2025	
Moisture Content						
Moisture	%	71.2	74.1	71.7	77.4	NT2_49



Pankaj Barai, Analyst
Inorganics - NSW
Accreditation No. 198

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Client : MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. : MURD03/251118 Quote No. : QT-02294 Order No. : PO-023621 Date Received : 13-NOV-2024 Sampled By : CLIENT
Attention : JAMIE WOODWARD Project Name : For Follow up enquiries : ASB@measurement.gov.au	Phone : 1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019519	MW WC	MUD WHELK TISSUE
N25/019520	MW NEC	MUD WHELK TISSUE

Lab Reg No.	Units	N25/019519	N25/019520			Method
Date Sampled		Not Provided	Not Provided			
Sample Reference		MW WC	MW NEC			
Polycyclic Aromatic Hydrocarbons						
Naphthalene	mg/kg	<0.01	<0.01			NGCMS_1111
Acenaphthylene	mg/kg	<0.01	<0.01			NGCMS_1111
Acenaphthene	mg/kg	<0.01	<0.01			NGCMS_1111
Fluorene	mg/kg	<0.01	<0.01			NGCMS_1111
Phenanthrene	mg/kg	<0.01	<0.01			NGCMS_1111
Anthracene	mg/kg	<0.01	<0.01			NGCMS_1111
Fluoranthene	mg/kg	<0.01	<0.01			NGCMS_1111
Pyrene	mg/kg	<0.01	<0.01			NGCMS_1111
Benz(a)anthracene	mg/kg	<0.01	<0.01			NGCMS_1111
Chrysene	mg/kg	<0.01	<0.01			NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg	<0.02	<0.02			NGCMS_1111
Benzo(a)pyrene	mg/kg	<0.01	<0.01			NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01	<0.01			NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.01			NGCMS_1111
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.01			NGCMS_1111
Surrogate: TER-D14	%REC	96	87			NGCMS_1111
Total Petroleum Hydrocarbons						
TPH C6 - C9	mg/kg	<25	<25			NGCMS_1121
TPH C10 - C14	mg/kg	<50	<50			NGCMS_1112
TPH C15 - C28	mg/kg	<100	<100			NGCMS_1112
TPH C29 - C36	mg/kg	<100	<100			NGCMS_1112
Surrogate: TOL-D8	%REC	101	100			NGCMS_1121
Dates						
Date extracted		20-NOV-2025	20-NOV-2025			
Date analysed		20-NOV-2025	20-NOV-2025			

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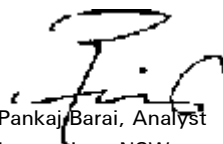
Lab Reg No.	Units	N25/019519	N25/019520			Method
Date Sampled		Not Provided	Not Provided			
Sample Reference		MW WC	MW NEC			



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Lab Reg No.	Units	N25/019519	N25/019520			Method
Date Sampled		Not Provided	Not Provided			
Sample Reference		MW WC	MW NEC			
Date extracted		20-NOV-2025	20-NOV-2025			
Date analysed		24-NOV-2025	24-NOV-2025			
Moisture Content						
Moisture	%	66.7	74.5			NT2_49



Pankaj Barai, Analyst
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Client : MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. : MURD03/251118 Quote No. : QT-02294 Order No. : PO-023621 Date Received : 13-NOV-2024 Sampled By : CLIENT
Attention : JAMIE WOODWARD Project Name : For Follow up enquiries : ASB@measurement.gov.au	Phone : 1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019521	S1	OYSTER TISSUE
N25/019522	S5	OYSTER TISSUE
N25/019523	S7	OYSTER TISSUE
N25/019524	S8	OYSTER TISSUE

Lab Reg No.			N25/019521	N25/019522	N25/019523	N25/019524	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			S1	S5	S7	S8	
	Units						Method
Polycyclic Aromatic Hydrocarbons							
Naphthalene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluorene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Phenanthrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluoranthene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benz(a)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Chrysene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	NGCMS_1111
Benzo(a)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Surrogate: TER-D14	%REC	61	73	87	79		NGCMS_1111
Total Petroleum Hydrocarbons							
TPH C6 - C9	mg/kg	<25	<25	<25	<25	<25	NGCMS_1121
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50	NGCMS_1112
TPH C15 - C28	mg/kg	<100	210	<100	<100	<100	NGCMS_1112
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100	NGCMS_1112
Surrogate: TOL-D8	%REC	99	97	100	101		NGCMS_1121
Dates							
Date extracted		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025		
Date analysed		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025		

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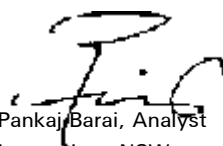
Lab Reg No.			N25/019521	N25/019522	N25/019523	N25/019524	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			S1	S5	S7	S8	
		Units					Method



Gabriela Saveluc, Analyst
Organics - NSW
Accreditation No. 198

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Lab Reg No.			N25/019521	N25/019522	N25/019523	N25/019524	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			S1	S5	S7	S8	
		Units					Method
Date extracted			20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed			24-NOV-2025	24-NOV-2025	24-NOV-2025	24-NOV-2025	
Moisture Content							
Moisture	%		74.1	71.8	73.6	75.9	NT2_49



Pankaj Barai, Analyst
Inorganics - NSW
Accreditation No. 198

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Lab Reg No.			N25/019521	N25/019522	N25/019523	N25/019524	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			S1	S5	S7	S8	
		Units					Method
Proximates							
Fat (Mojonnier extraction)	g/100g		2.6	2.6	2.2	1.8	VL302



Paul Adorno, Section Manager
Food and Health Chemistry Lab - Vic
Accreditation No. 198

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National Measurement Institute

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Client :	MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. :	MURD03/251118
Attention :	JAMIE WOODWARD	Quote No. :	QT-02294
Project Name :		Order No. :	PO-023621
For Follow up enquiries :	ASB@measurement.gov.au	Date Received :	13-NOV-2024
		Sampled By :	CLIENT
		Phone :	1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019525	WC	OYSTER TISSUE
N25/019526	CC	OYSTER TISSUE
N25/019527	HC	OYSTER TISSUE
N25/019528	NB	OYSTER TISSUE

Lab Reg No.			N25/019525	N25/019526	N25/019527	N25/019528	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			WC	CC	HC	NB	
	Units						Method
Polycyclic Aromatic Hydrocarbons							
Naphthalene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluorene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Phenanthrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluoranthene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benz(a)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Chrysene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	NGCMS_1111
Benzo(a)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Surrogate: TER-D14	%REC	95	71	77	60		NGCMS_1111
Total Petroleum Hydrocarbons							
TPH C6 - C9	mg/kg	<25	<25	<25	<25	<25	NGCMS_1121
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50	NGCMS_1112
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100	NGCMS_1112
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100	NGCMS_1112
Surrogate: TOL-D8	%REC	101	100	98	101		NGCMS_1121
Dates							
Date extracted		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025		
Date analysed		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025		

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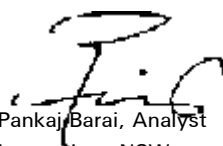
Lab Reg No.			N25/019525	N25/019526	N25/019527	N25/019528	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			WC	CC	HC	NB	
		Units					Method



Gabriela Saveluc, Analyst
Organics - NSW
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Lab Reg No.			N25/019525	N25/019526	N25/019527	N25/019528	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			WC	CC	HC	NB	
		Units					Method
Date extracted			20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed			24-NOV-2025	24-NOV-2025	24-NOV-2025	24-NOV-2025	
Moisture Content							
Moisture	%		74.2	74.2	75.4	73.7	NT2_49



Pankaj Barai, Analyst
Inorganics - NSW
Accreditation No. 198

03-DEC-2025

Lab Reg No.			N25/019525	N25/019526	N25/019527	N25/019528	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			WC	CC	HC	NB	
		Units					Method
Proximates							
Fat (Mojonnier extraction)	g/100g		0.6	2.0	2.1	1.6	VL302



Paul Adorno, Section Manager
Food and Health Chemistry Lab - Vic
Accreditation No. 198

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Client :	MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. :	MURD03/251118
Attention :	JAMIE WOODWARD	Quote No. :	QT-02294
Project Name :		Order No. :	PO-023621
For Follow up enquiries :	ASB@measurement.gov.au	Date Received :	13-NOV-2024
		Sampled By :	CLIENT
		Phone :	1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019529	CH1	OYSTER TISSUE
N25/019530	CH2	OYSTER TISSUE
N25/019531	CH3	OYSTER TISSUE
N25/019532	CH4	OYSTER TISSUE

Lab Reg No.			N25/019529	N25/019530	N25/019531	N25/019532	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH1	CH2	CH3	CH4	
	Units						Method
Polycyclic Aromatic Hydrocarbons							
Naphthalene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthylene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluorene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Phenanthrene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Anthracene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluoranthene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Pyrene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benz(a)anthracene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Chrysene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg		<0.02	<0.02	<0.02	<0.02	NGCMS_1111
Benzo(a)pyrene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(g,h,i)perylene	mg/kg		<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Surrogate: TER-D14	%REC		63	73	66	65	NGCMS_1111
Total Petroleum Hydrocarbons							
TPH C6 - C9	mg/kg		<25	<25	<25	<25	NGCMS_1121
TPH C10 - C14	mg/kg		<50	<50	<50	<50	NGCMS_1112
TPH C15 - C28	mg/kg		730	<100	<100	<100	NGCMS_1112
TPH C29 - C36	mg/kg		<100	<100	<100	<100	NGCMS_1112
Surrogate: TOL-D8	%REC		98	98	102	99	NGCMS_1121
Dates							
Date extracted			20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed			20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	

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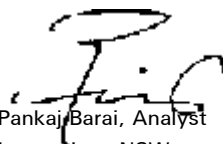
Lab Reg No.		Units	N25/019529	N25/019530	N25/019531	N25/019532	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH1	CH2	CH3	CH4	Method



Gabriela Saveluc, Analyst
Organics - NSW
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Lab Reg No.		Units	N25/019529	N25/019530	N25/019531	N25/019532	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH1	CH2	CH3	CH4	Method
Date extracted			20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed			24-NOV-2025	24-NOV-2025	24-NOV-2025	24-NOV-2025	
Moisture Content							
Moisture	%		73.9	71.4	75.2	73.4	NT2_49



Pankaj Barai, Analyst
Inorganics - NSW
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Lab Reg No.		Units	N25/019529	N25/019530	N25/019531	N25/019532	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH1	CH2	CH3	CH4	Method
Proximates							
Fat (Mojonnier extraction)	g/100g	2.6	2.9	2.0	1.7	VL302	



Paul Adorno, Section Manager
Food and Health Chemistry Lab - Vic
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Report No. RN1483774

Client : MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. : MURD03/251118 Quote No. : QT-02294 Order No. : PO-023621 Date Received : 13-NOV-2024 Sampled By : CLIENT
Attention : JAMIE WOODWARD Project Name : For Follow up enquiries : ASB@measurement.gov.au	Phone : 1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019533	CH4A	OYSTER TISSUE
N25/019534	CH5	OYSTER TISSUE
N25/019535	CH6	OYSTER TISSUE
N25/019536	CH7	OYSTER TISSUE

Lab Reg No.			N25/019533	N25/019534	N25/019535	N25/019536	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH4A	CH5	CH6	CH7	
	Units						Method
Polycyclic Aromatic Hydrocarbons							
Naphthalene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Acenaphthene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluorene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Phenanthrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Fluoranthene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benz(a)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Chrysene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	NGCMS_1111
Benzo(a)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	NGCMS_1111
Surrogate: TER-D14	%REC	60	53	52	57		NGCMS_1111
Total Petroleum Hydrocarbons							
TPH C6 - C9	mg/kg	<25	<25	<25	<25	<25	NGCMS_1121
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50	NGCMS_1112
TPH C15 - C28	mg/kg	<100	270	560	460		NGCMS_1112
TPH C29 - C36	mg/kg	<100	<100	<100	<100		NGCMS_1112
Surrogate: TOL-D8	%REC	97	100	102	97		NGCMS_1121
Dates							
Date extracted		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025		
Date analysed		20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025		

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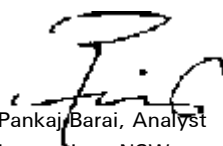
Lab Reg No.			N25/019533	N25/019534	N25/019535	N25/019536	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH4A	CH5	CH6	CH7	
		Units					Method



Gabriela Saveluc, Analyst
Organics - NSW
Accreditation No. 198

03-DEC-2025

Lab Reg No.			N25/019533	N25/019534	N25/019535	N25/019536	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH4A	CH5	CH6	CH7	
		Units					Method
Date extracted			20-NOV-2025	20-NOV-2025	20-NOV-2025	20-NOV-2025	
Date analysed			24-NOV-2025	24-NOV-2025	24-NOV-2025	24-NOV-2025	
Moisture Content							
Moisture	%		75.3	73.8	72.6	73.2	NT2_49



Pankaj Barai, Analyst
Inorganics - NSW
Accreditation No. 198

03-DEC-2025

Lab Reg No.			N25/019533	N25/019534	N25/019535	N25/019536	
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided	
Sample Reference			CH4A	CH5	CH6	CH7	
		Units					Method
Proximates							
Fat (Mojonnier extraction)	g/100g		1.9	1.8	2.8	2.6	VL302



Paul Adorno, Section Manager
Food and Health Chemistry Lab - Vic
Accreditation No. 198

03-DEC-2025

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Client :	MURDOCH UNIVERSITY MARINE AND FRESHWATER RESEARCH LABORATORY SCHOOL OF VETERINARY AND LIFE SCIENCES MURDOCH UNIVERSITY, 90 SOUTH STREET MURDOCH WA 6150	Job No. :	MURD03/251118
Attention :	JAMIE WOODWARD	Quote No. :	QT-02294
Project Name :		Order No. :	PO-023621
For Follow up enquiries :	ASB@measurement.gov.au	Date Received :	13-NOV-2024
		Sampled By :	CLIENT
		Phone :	1300 722 845

Lab Reg No.	Sample Ref	Sample Description
N25/019537	CH7A	OYSTER TISSUE

Lab Reg No.			N25/019537				
Date Sampled			Not Provided				
Sample Reference			CH7A				
	Units						Method
Polycyclic Aromatic Hydrocarbons							
Naphthalene	mg/kg	<0.01					NGCMS_1111
Acenaphthylene	mg/kg	<0.01					NGCMS_1111
Acenaphthene	mg/kg	<0.01					NGCMS_1111
Fluorene	mg/kg	<0.01					NGCMS_1111
Phenanthrene	mg/kg	<0.01					NGCMS_1111
Anthracene	mg/kg	<0.01					NGCMS_1111
Fluoranthene	mg/kg	<0.01					NGCMS_1111
Pyrene	mg/kg	<0.01					NGCMS_1111
Benz(a)anthracene	mg/kg	<0.01					NGCMS_1111
Chrysene	mg/kg	<0.01					NGCMS_1111
Benzo(b)&(k)fluoranthene	mg/kg	<0.02					NGCMS_1111
Benzo(a)pyrene	mg/kg	<0.01					NGCMS_1111
Indeno(1,2,3-cd)pyrene	mg/kg	<0.01					NGCMS_1111
Dibenzo(a,h)anthracene	mg/kg	<0.01					NGCMS_1111
Benzo(g,h,i)perylene	mg/kg	<0.01					NGCMS_1111
Surrogate: TER-D14	%REC	63					NGCMS_1111
Total Petroleum Hydrocarbons							
TPH C6 - C9	mg/kg	<25					NGCMS_1121
TPH C10 - C14	mg/kg	<50					NGCMS_1112
TPH C15 - C28	mg/kg	100					NGCMS_1112
TPH C29 - C36	mg/kg	<100					NGCMS_1112
Surrogate: TOL-D8	%REC	102					NGCMS_1121
Dates							
Date extracted		20-NOV-2025					
Date analysed		20-NOV-2025					

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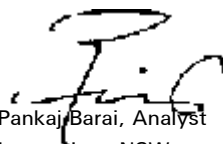
Lab Reg No.		Units	N25/019537				
Date Sampled			Not Provided				
Sample Reference			CH7A				Method



Gabriela Saveluc, Analyst
Organics - NSW
Accreditation No. 198

03-DEC-2025

Lab Reg No.		Units	N25/019537				
Date Sampled			Not Provided				
Sample Reference			CH7A				Method
Date extracted			20-NOV-2025				
Date analysed			24-NOV-2025				
Moisture Content							
Moisture	%		74.9				NT2_49



Pankaj Barai, Analyst
Inorganics - NSW
Accreditation No. 198

03-DEC-2025

Lab Reg No.		Units	N25/019537				
Date Sampled			Not Provided				
Sample Reference			CH7A				
							Method
Proximates							
Fat (Mojonnier extraction)		g/100g	2.7				VL302



Paul Adorno, Section Manager
Food and Health Chemistry Lab - Vic
Accreditation No. 198

03-DEC-2025

105 Delhi Road, North Ryde NSW 2113 Tel: 1300 722 845 Web: industry.gov.au/measurement

National Measurement Institute

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Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

* Denotes the analyte or test method is not within our ISO/IEC 17025 scope of accreditation.

NA - Test Not Required

Measurement Uncertainty is available upon request.

Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.

Unless otherwise stated, all biota/food results are reported on a wet weight basis.

Note: Sampling date(s) have been provided by the client.

Note: Where sampling dates are not provided NMI is unable to determine compliance to any applicable Holding Time requirements

The testing was undertaken at: 1/153 Bertie Street, Port Melbourne, Vic, 3207

The testing was undertaken at: 105 Delhi Road, North Ryde, NSW, 2113