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Executive Summary

Background

Gladstone Ports Corporation (GPC) manages maintenance dredging and placement activities at the Port of Bundaberg through a comprehensive Maintenance Dredging Strategy framework. As part of the latter, in 2023 GPC obtained a new 10-year Commonwealth Sea Dumping Permit (SD2023-4053) and developed a Long-term Maintenance Dredging Management Plan which was also approved in 2023.

A sediment sampling and analysis program was undertaken in accordance with National Assessment Guidelines for Dredging (NAGD) in 2024 to provide a valid evaluation of the physical and chemical properties of the sediments to be dredged, to determine their suitability for land-based re-use or unconfined sea placement.

Assessment

Sediment composition varied across the port area. The inner reach was dominated by fine material (sediment <0.075 mm), while the middle reach had greater heterogeneity, with some sites having higher sand content. The entrance channel was comprised of mixed sand and fines, transitioning offshore to coarser, unconsolidated sediments dominated by sand. Offshore sediments in the dredged areas were dominated by sand and were similar to offshore background samples.

The sediments in the port area were found to be suitable for ocean disposal in accordance with NAGD based on the following results:

- The upper 95% confidence limits (95% UCL) of the mean concentration of all analysed metals and metalloids were less than respective NAGD screening levels and therefore considered suitable for ocean disposal in accordance with NAGD;
- Total Petroleum Hydrocarbons (TPH) and Polycyclic Aromatic Hydrocarbons (PAHs) had
 concentrations below the LOR in most samples. When normalised to 1% TOC, concentrations
 above the LOR were below their respective screening levels. Benzene, toluene, ethylbenzene and
 xylene (BTEX) and organotins were not detected in any samples. This indicates dredged sediments
 were suitable for ocean disposal in accordance with NAGD; and
- Acid sulphate soil analysis indicated no existing acidity in sediments, with pH values ranging from neutral to alkaline. Potential acidity was low to moderate, and the sediments exhibited a high acidneutralizing capacity (ANC), suggesting they are unlikely to generate acid if disturbed. Leachate tests corroborate that acid neutralising capacity was sufficient for neutralising acids upon oxidation in all samples except M7. If placed on land, sediments at M7 would require treatment utilising the liming rate excluding ANC.

The evaluation of laboratory and field QA/QC procedures and assessments indicated that all sampling, sample handling and storage and laboratory analysis was undertaken to a high standard providing scientific confidence that the presented results are valid to allow an assessment of sediment quality against the NAGD.



Acronyms

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Acronym	Definition
ASS	Acid Sulfate Soils
BGL	Below ground level
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CFM	Certified reference materials
CoC	Chain of custody
dGPS	Differentially corrected global positioning system
DESI	Department of Environment, Science and Innovation
DBT	Dibutyltin
DQIs	Data Quality Indicators
EA	Environmental Authority
ECs	Emerging Contaminants
ERA	Environmentally Relevant Activity
GPC	Gladstone Ports Corporation Ltd
HTs	Holding times
LAT	Lowest Astronomical Tide
LCS	Laboratory Control Samples
LMDMP	Long-term Maintenance Dredging Management Plan
LOR	Limit of Reporting
MDS	Maintenance Dredging Strategy
MRA	Material Relocation Area
NAGD	National Assessment Guidelines for Dredging
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Amendment Measure
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
РоВ	Port of Bundaberg
PASS	Potential Acid Sulfate Soils
PFAS	Per- and polyfluoroalkyl substances
PCBs	Polychlorinated Biphenyl

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Acronym	Definition
PQLs	Practical Quantification Limits
PSD	Particle size distribution
QA/QC	Quality assurance and quality control
QLD	Queensland
QASSTM	Queensland Acid Sulfate Soil Technical Manual
RPD	Relative Percent Deviation
RPD	Relative Percent Difference
SAP	Sediment Sampling and Analysis Plan
ТВТ	Tributyltin
TKN	Total Kjeldahl Nitrogen
TP	Total Phosphorus
TPH	Total Petroleum Hydrocarbons
TSHD	Trailing Suction Hopper Dredger
UCL	Upper confidence level



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1 Introduction

1.1 Background

The Port of Bundaberg (PoB) is owned and operated by the Gladstone Ports Corporation Ltd (GPC). Under the *Transport Infrastructure Act 1994* and the *Transport Operations (Marine Safety) Act 1994*, GPC has been granted the power to conduct maintenance dredging at the PoB to provide and operate efficient port facilities and services by maintaining navigable depths within the port navigation areas (Figure 1.1).

GPC manages maintenance dredging and placement activities at the PoB through a comprehensive Maintenance Dredging Strategy (MDS) framework. As part of the latter, in 2023 GPC has obtained a new 10-year Commonwealth Sea Dumping Permit (SD2023-4053) and developed a Long-term Maintenance Dredging Management Plan (LMDMP) which was also approved in 2023.

As part of the MDS framework and to follow relevant guidelines under the Sea Dumping Permit requirements, in particular the National Assessment Guidelines for Dredging 2009 (NAGD) (Commonwealth of Australia 2009), GPC prepares and implements a Sediment Sampling and Analysis Plan (SAP), comprising a design and an implementation document, every five (5) years. The aim of the SAP is to provide a statistically valid evaluation of the physical and chemical properties of the sediments to be dredged, to determine their suitability for land-based re-use or unconfined sea placement.

The most recent SAP at the PoB was undertaken in 2019 (Future Plus 2019). GPC commissioned BMT to undertake a new SAP in 2024 to provide a contemporary assessment of sediment quality at PoB, in accordance with the five yearly currency period of NAGD.

The 2024 SAP design document (BMT 2024) was prepared and approved by the relevant Determining Authority in September 2024. This SAP implementation report presents the methodology and findings of the 2024 sediment characterisation study of PoB channel navigation areas requiring maintenance dredging.

1.2 SAP Implementation Document Specific Objectives

Building upon the procedures established and described in the SAP design document, the objectives of this SAP implementation report include:

- Implement the SAP design document providing a Phase I and II assessment of sediments (Commonwealth of Australia 2009) and maintaining alignment with the NADG by collecting good quality data;
- Describe and quantify the physical properties of sediments to be dredged;
- · Quantify concentrations of potential contaminants in sediments to be dredged;
- Assess suitability of dredged sediments for unconfined sea disposal by comparing analytical results to relevant guideline and screening levels set out in the NAGD, including determining if bioavailability testing is required, Phase III under NAGD; and
- Compare concentrations of tested parameters to relevant guideline values to assess suitability of dredged sediments for on-land re-use.



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1.3 PoB Maintenance Dredging Footprint Description

Current port navigation areas at the PoB where the maintenance dredging activity takes place are divided into Inner, Middle and Sea Reaches (Figure 1.1). These areas were described in detail in the approved SAP design document (BMT 2024) and include a shipping channel leading into a swing basin as well as an Insurance Trench. The latter has recently been included in the maintenance dredging footprint, however the inclusion of this area into the dredging footprint has not resulted in an increase of maintenance dredging requirements.

To be consistent with previous SAP studies, the Inner and Middle Reaches were collectively considered the Port Area, and the Sea Reaches were considered the Entrance Channel Area. Furthermore, upstream reference sampling locations outside the dredging footprint have also been included in this SAP and classified as the River Area whilst offshore Material Relocation Area (MRA) and areas adjacent to it have been classed as Offshore Area (Section 2.1).

During a typical year, sedimentation above design depths occurs predominantly within the Inner Reaches due to fluvial inputs (GPC 2021). Dredging typically focuses on removing up to 1 m of sediments from locations within this area as well as the Sea Reaches and thus the Entrance Channel Area where sediments are deposited by longshore sediment transport (BMT 2024).

The preferred and most common placement solution for maintenance dredged material at the PoB is sea placement within the designated and approved offshore MRA (Figure 1.1). Land disposal at the onshore MRA is instead only undertaken when sea placement is not practicable.



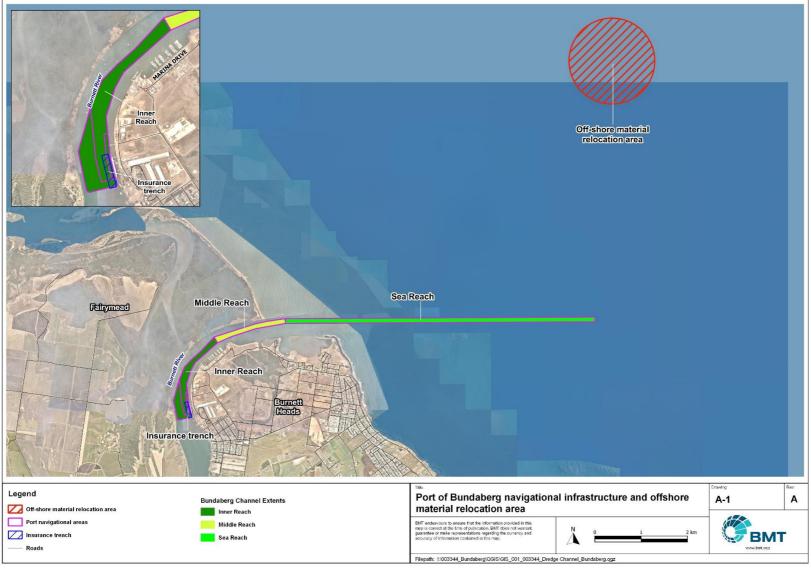


Figure 1.1 PoB navigational infrastructure and offshore MRA



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2 Methodology

2.1 Applicable Guidelines and Compliance With SAP Design Document

All sediments sampling and analysis was undertaken in accordance with NAGD (Commonwealth of Australia 2009) and the National Environment Protection Amendment Measure (NEPM) (DCCEEW 2013) as well as the Queensland Acid Sulfate Soil Technical Manual – soil management guidelines v5.1 (QASSTM) (Dear *et al.* 2024) and the National Guidelines for the dredging of acid sulfate soil (ASS) sediments and associated dredge material (Simpson *et al.* 2018).

All sampling and analysis procedures followed the approach outlined in the SAP design document, (BMT2024), a copy of this document is provided in Annex A.

2.2 SAP Design Rationale

NEPM does not provide sampling and analysis procedures for marine sediments. The PoB 2024 maintenance dredging SAP was therefore designed in accordance with NAGD and considered previous SAP designs and knowledge gained from extensive studies conducted at the PoB as part of maintenance dredging and related framework (BMT 2024). Information from these documents and studies was used to select the most appropriate sampling methodology, number of samples and refinement of the contaminant list.

2.3 Sampling Timing

Most of the sediment sampling campaign was conducted from the 8th of October 2024 to the 11th of October 2024. Due to adverse weather conditions, sampling sites at and adjacent to the offshore MRA could not be sampled.

The sampling campaign was completed between the 3rd and the 6th of December, when weather was conducive for safe sampling operations. Sampling was undertaken during daytime hours.

2.4 Sampling Locations and Number

Sampling number was determined in accordance with Table 6 of the NAGD (Commonwealth of Australia 2009) whilst sampling locations selection within the Port and Channel Entrance Areas was determined in accordance with the grid method detailed in Appendix D of the NAGD (Commonwealth of Australia 2009) as well as according to the 2019 and 2022 SAPs (Future Plus 2019; BMT 2022).

Locations and numbers at River background and Offshore MRA and areas adjacent to it will also be as per historical SAPs (Future Plus 2019; BMT 2022). Moreover, the SAP design document identified the need to ensure that sediment types at riverine background sites are representative of the material present in dredged areas. The riverine background sites sampled in 2019 and 2022 SAP (Future Plus 2020; BMT 2022) were mainly characterised by sand and gravel (>80%) except at Site 2 which was comprised by a clay and silt (>90%).

Full details on sampling locations and number derivation are highlighted in the SAP Design document (BMT 2024). Proposed number of sampling location per area and final coordinates as recorded in the field are provided in Table 2.1 and Table 2.2 respectively.

Table 2.1 Proposed number of samples per area

Study area	Historic sample location number	Proposed sample numbers per area	Sample identifiers per area
River (background locations)	7	7	1-7
Port (Inner and Middle Reaches)	6	6	8-13
Entrance Channel (Sea Reach)	3	3	14-16
Offshore (MRA and adjacent to it)	6 (3 inside MRA and 3 adjacent to it)	6	17-22

2.5 Quality Control Samples

The following field and laboratory quality control samples were obtained:

- Field duplicate sample (5% of locations) (additional core samples at one randomly selected sampling location) to determine the small-scale variability of the sediment's physical and chemical characteristics. At each field duplicate sample location, two (2) separate grabs were collected;
- Duplicate split samples (5% of locations) (sample numbers as per Table 2.1) where sediments were thoroughly mixed and split into two (2) sample containers set to assess laboratory variation, with one (1) of the two (2) samples sent to a second (reference) laboratory for analysis; and
- One (1) trip blank container per sampling day was be filled with inert material (e.g. chromatographic sand) to be analysed concurrent with the analysis of volatile organic substances.
- One (1) rinsate blank container (equipment blank) per sampling day was collected to assess potential contamination from equipment.

Table 2.2 Provisional sample locations and related details

Sample ID	Study area	Easting	Northing
RB1		428,620	7,248,815
RB2		435,190	7,250,408
RB3		436,394	7,252,712
RB4	River – Background	435,320	7,255,787
RB5		437,066	7,257,067
RB6		437,619	7,258,811
RB7		437,587	7,259,787
E1		440,064.5	7,262,112
E2	Sea Reach - Entrance Channel Area	440,781	7,262,147
E3		444,579.6	7,262,148
14		437,302	7,260,107
15	Inner Reach – Port Area	437,429.6	7,260,343
16		437,699.2	7,261,349
M7	Middle Reach – Port Area	438,260.8	7,261,788



Sample ID	Study area	Easting	Northing
M8		438,862.6	7,261,948
M9		439,465	7,262,136
OSG1		446,221	7,268,172
OSG2	Offshore MRA	447,125	7,267,852
OSG3		446,420	7,267,268
OSB1		446,269	7,265,580
OSB2	Offshore - Background	446,420	7,267,268
OSB3		446,269	7,265,580



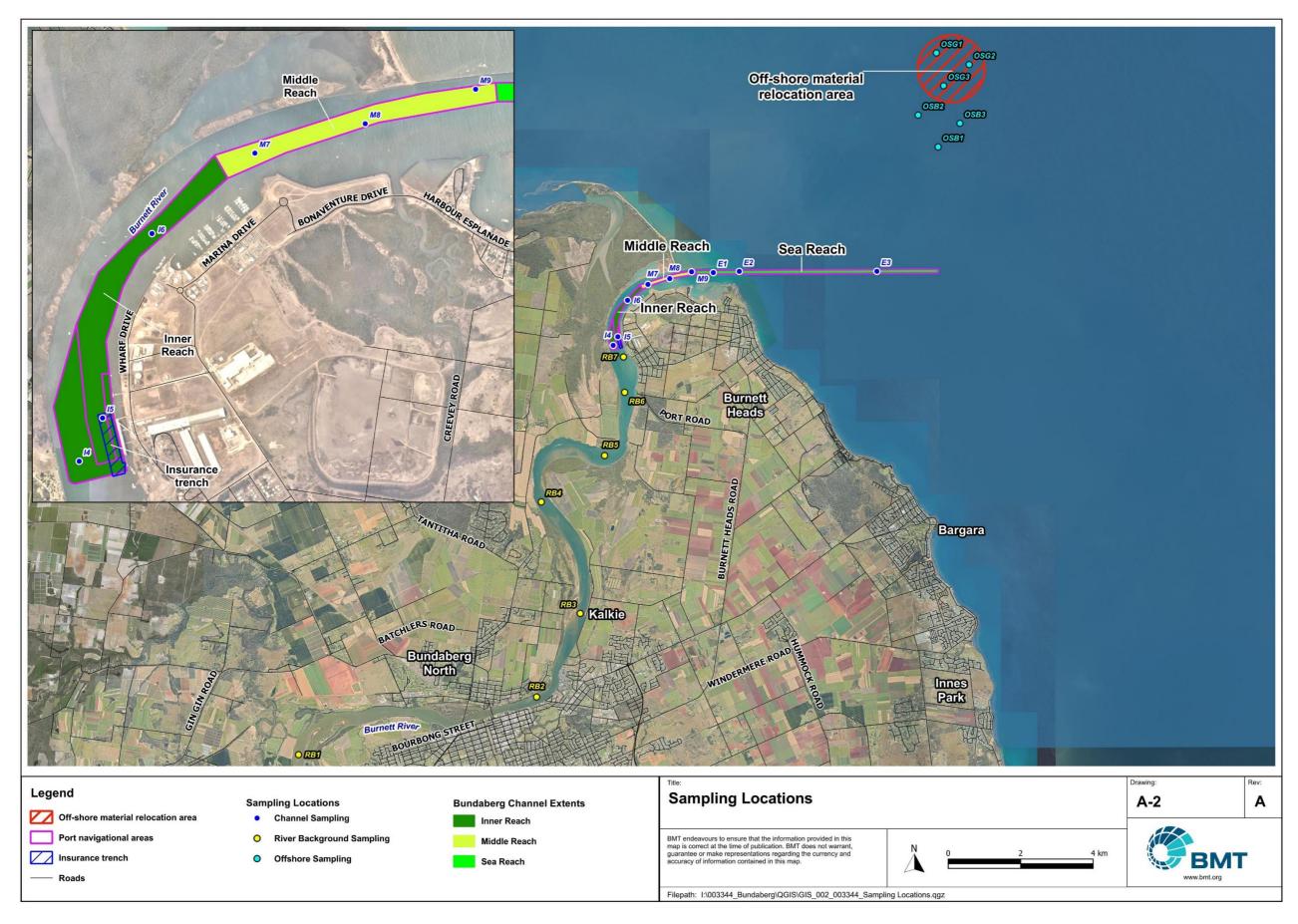


Figure 2.1 PoB maintenance areas and background locations proposed approximate sampling locations

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2.6 Contaminant List

The contaminant list for the 2024 PoB Maintenance Dredging SAP was derived in accordance with NAGD and a review of contaminant sources and past sampling results. The adopted contaminant list is provided in Table 2.3.

A range of contaminants such as pesticides, per- and polyfluoroalkyl substances (PFAS), and dioxins and furans were not included in the contaminant list as discussed in the approved SAP Design document (BMT 2024). Moreover, other analytes not required under the NAGD were included to provide information on the sediment physical characteristics and gain understanding on the presence of ASS/PASS in case sediment will be disposed to land (Section 1.3).

2.7 Sample Collection

2.7.1 Survey Vessel and Positioning

Sampling at the proposed sampling locations was conducted from the specialised vessel "Abyss Dive", which is a Class 2C commercial vessel. All sediment sampling was supervised and managed by a team of qualified marine scientists and technicians with experience in the implementation of sediment sampling and analysis programs.

The on-board depth sounder with an accuracy of \pm 0.25m was utilised to position the vessel on the planned sampling locations and related coordinates as per approved SAP Design document. Any variation from these locations was appropriately documented.

2.7.2 Sampling Methodology and Equipment

Sediments samples were collected using a Van Veen grab sampler with gape size of 0.18 m^2 and dimensions of 300 mm x 300 mm x 300 mm collecting approximately 10-15 kg of sediments from up to 30 mm below ground level (BGL). In all instances where the grab sampler jaws did not close fully due to coarse samples or any debris re-sampling was undertaken.

The sampling device was thoroughly cleaned with De-con 90 solution prior to use and cleaned and rinsed with seawater between sampling locations to prevent cross contamination between samples.

2.7.3 Sampling Collection, Handling and Storage

Sediments samples were logged and processed onboard the sampling vessel. For each sample location and sample collected a site description pro-forma was completed to document sample collection and sediment description. The following information was collected:

- Project name and number;
- Date and time of sampling;
- Sampler's name;
- Field sample number;
- Northing and Easting of sample location (from onboard dGPS);
- Sediment colour;
- Sediment odour;
- Field texture (fine sand, silt, clay, sand, clay/sand);
- Tidal predictions and water depth at sample location (derived from onboard depth sounder);
- Weather and sea state conditions at the time of sampling; and

General comments: presence of organic matter, benthic organisms, shells etc.

The samples from each sub-sample were carefully homogenized in a clean container prior to the filling of clean sampling jars supplied from the analytical laboratory. Nitrile gloves were worn by all field personnel handling the sediment, and gloves were disposed of after processing of each sample.

Sample bottles were labelled with a waterproof marker pen on the bottle label and lid. In particular, sample bottles for organic analyses were filled with zero headspace to minimise volatilisation. A field trip blank sample container filled with clean chromatographic sand was included in the analysis for each day of sampling. All storage containers were chilled on ice immediately following sample collection. ASS samples were frozen at the end of each sampling day to minimise potential oxidation of the sediment material. At the end of the sampling campaign, all samples were submitted to the primary and secondary analytical laboratories. All samples were submitted to the laboratories with Chain of Custody (CoC) documentation.

Table 2.3 Contaminant List, Target Practical Quantification Limits (PQLs), Guideline Screening Levels and Level of Investigation

Parameter	Target PQL	Screening Level	Level of Investigation	
	Basic Characterist	ics		
PSD	63 to 0.002 mm	-		
Moisture Content (%)	0.1	-	All Samples	
Total Organic Carbon (%)	0.1	-		
	Metals and Metalloids (mg/kg)		
Antimony				
Arsenic	1	20 ¹		
Cadmium	0.1	1.5 ¹		
Chromium	1	80 ¹		
Copper	1	65 ¹	All Comples	
Lead	1	50 ¹	All Samples	
Mercury	0.01	0.15 ¹		
Nickel	1	21 ¹		
Silver	0.1	1 ¹		
Zinc	1	200 ¹		
	Organotin Compounds (µgSn/kg)		
MBT, DBT, and TBT	1 μg/kg³	9 μg/kg¹	All samples	
	Organics (mg/kg)		
TPH	100	280 ²		
TPH Fractions	10-100	-		
BTEX	0.2	10 (Benzene) ³ 65 (Toluene) ³ 40 (Ethylbenzene) ³ 1.6 (Xylenes) ³	All Samples	

Parameter	Target PQL	Screening Level	Level of Investigation		
PAHs	0.005 (0.1 for sum)	10,000 ²			
	Nutrients (mg/	kg)			
Total Nitrogen as N	20	-			
Total Kjeldahl Nitrogen as N	20	-	All complete		
Total Phosphorus as P	1	-	All samples		
Nitrate and Nitrite as N	0.1	-			
	Acid Sulfate Pote	ential			
Chromium Suite	2 mole H+/tonne	Liming rate based on Table 4.2 (Dear et al. 2014)	All samples (excluding background locations)		
Slab/Chip Tray Incubation test (for ANC)	As per Slab Incuba 0.1 pH unit Method NLM-8.1/ 0 Tray NLM-8.2		Undertaken on samples if initial net acidity results (less ANC) are greater than action criteria (0.03 %S / 8 mol H+/t)		

Table notes:

2.8 Laboratory Analysis

2.8.1 Analytical Tests

All analytical testing was conducted by National Association of Testing Authorities (NATA) accredited laboratory facilities holding accreditation for the required analyses.

Primary analysis of sediment samples was conducted by Australian Laboratory Services (ALS). Eurofins was used as the secondary (reference) laboratory for inter-laboratory quality testing.

2.8.2 Laboratory Quality Control

Laboratories followed laboratory QC procedures in accordance with requirements outlined in Appendix F of NAGD (Commonwealth of Australia 2009). This includes analysis of laboratory blanks, duplicates, certified surrogate materials and spiked samples, as described below.

2.8.3 Laboratory Blanks

The purpose of this assessment is to monitor for potential laboratory contamination of samples due to cross-contamination during laboratory preparation, extraction or analysis. Blank sample concentrations should be at or near the detection limit of the method used.

2.8.4 Laboratory Duplicates

This assessment refers to a randomly selected intra-laboratory split sample, which provides information regarding the method precision and sample heterogeneity. Results are presented as Relative Percent Difference (RPD) values of two sample concentrations for a specific contaminant. NAGD recommends

¹ National Assessment Guidelines for Dredging NAGD (2009) (Commonwealth of Australia 2009)

² Updated screening levels as per Simpson et al. (2013)

³ National Environment Protection (Assessment of Site Contamination) Measure April 2011 (DCCEEW 2013)



pical RPD of the method of ±35%. This recommended RPD is

that duplicates should agree within a typical RPD of the method of ±35%. This recommended RPD is typically not adopted by analytical laboratories as it does not account for the greater uncertainty for contaminant concentrations close to the method's detection limit. For the primary laboratory ALS 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%; and

Result > 20 times LOR: 0% - 20%.

2.8.5 Surrogate and Matrix Spikes

Surrogate spikes or Laboratory Control Samples (LCS) are certified reference materials similar in composition to the target analyte but not likely to be present in the environment. The purpose of this measurement is to monitor method precision and accuracy. Matrix spikes refer to an intra-laboratory split sample spiked with a representative set of target analytes of known concentration. Matrix spikes are assessed to monitor potential sample matrix effects on analyte recoveries. For both surrogate and matrix spikes, a calculation of the percent recovery of the spiked amount against the returned concentration is performed indicating analytical performance.

NAGD states that recovery limits of 75% - 125% are generally acceptable. Analytical laboratories typically adopt specific surrogate and matrix spike recovery limits for the various contaminant compound groups. It is also noted that ideal recovery ranges may be waived in the event of sample matrix interference.

2.9 Data Analysis

2.9.1 NAGD Phase II - Sediment Contaminants

Concentrations of chemicals measured in sediment samples were compared to screening levels listed in Table 2 of NAGD to determine whether the material is suitable for unconfined placement at sea or if further analyses, such as elutriate, bioavailability or toxicity testing, are required. Specifically, mean concentrations of chemical parameters at the 95% upper confidence level (UCL) were compared against NAGD screening levels and if exceeded, to ambient background levels at reference sites. This involved the steps described in the following sections.





3 Results

3.1 Sediment characterisation

3.1.1 Inner reach, middle reach and entrance channel areas

The sediment composition across the port area varied on a longitudinal gradient as follows:

- Inner reach Sediments within the inner reach were dominated by the fines fraction, ranging from 75 to 97%, with a mean of 89% and low variability (RSD 13%). The sand fraction ranged from 3 to 25%, with a mean of 11 % and high variability (RSD 105 %). Gravel was not detected in any sample within the inner reach (<1%).
- Middle reach Sediments within the middle reach had a similar composition to the inner reach. However, sample M9 had a much higher sand content (98%) than that of samples M7 (6%) and M8 (10%). This is likely a result of the proximity of sample M9 to the entrance channel where sand was the predominant sediment type. Across the middle reach, fines content ranged from <1 to 94 %, with a mean of 70 % and moderate variability (RSD 67 %). The sand content ranged from 6 to 98 %, with a mean of 30 % and high variability (RSD 151 %). Gravel was detected in low proportions in sample M9 (2 %).
- Entrance channel The entrance channel area exhibited a variable dominance of sand and fines fractions; sand content ranged from 28 to 86%, and fines content ranged from 5 to 71%. Samples closest to the river entrance (E1 and E2) showed higher proportions of mixed sand and fine fractions. In contrast, sample E3 had a composition resembling that of offshore MRA sediments. This sample contained a much higher gravel fraction (31%), alongside a dominant sand fraction (66%) and a minimal fines fraction (3%), indicating a transition to a more unconsolidated sediment type.

3.1.2 Offshore MRA and Background Sites

Sediments at the offshore MRA were homogenous across the site. Sediments were dominated by the sands fraction ranging from 77 to 86 %, with a mean of 83% and low variability (RSD 3%). Gravel was detected in all samples ranging from 10 to 16%, with a mean of 13 % and low variability (RSD 23 %). The fines fraction ranged from 1 to 9%, with a mean of 4 % and high variability (RSD 126 %).

The sediment composition of the offshore MRA sediments were comparable to the offshore background samples, which had mean sand, fines and gravel content of 80, 1 and 20 %, respectively. Overall, offshore samples contained more unconsolidated sediments, typical of shell grit and sand, in contrast to the finer, silty material present among the river channels.



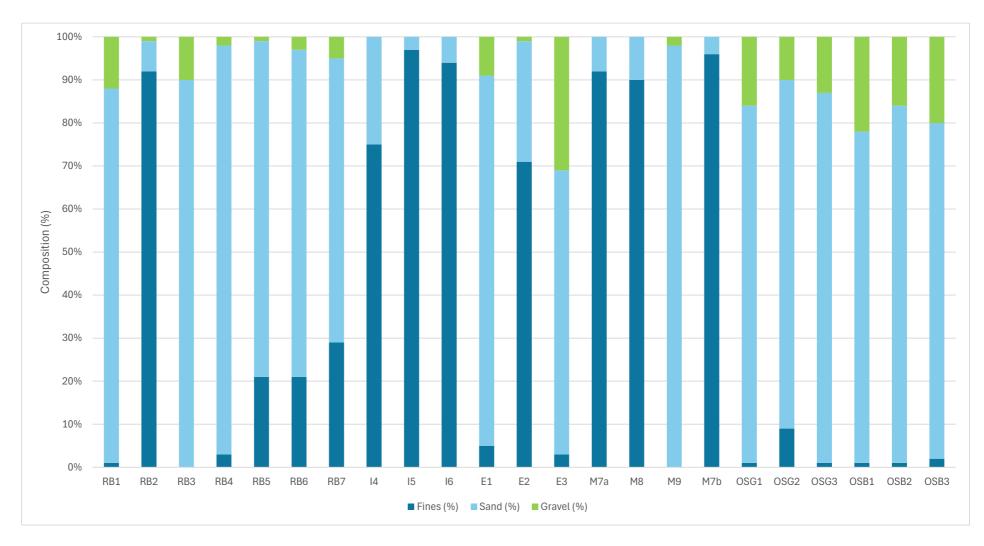


Figure 3.1 Sediment particle size distribution at each site. Note: M7a and M7b are duplicate samples collected at M7



3.2 Metals and metalloids

Table 3.1 presents the summary statistics for metals and metalloids at each sampling location.

Most metals and metalloids were detected in all samples across the survey area. The exceptions were antimony, cadmium, and silver which were not detected in most samples.

Arsenic was the only metal/metalloid to exceed the NAGD screening level (20 mg/kg) in individual samples. Arsenic concentrations were at or exceeded the NAGD in two samples: samples E3 (27.7 mg/kg) and OSB1 (20 mg/kg). However, the 95% UCL for arsenic (10.56 mg/kg) was below the NAGD screening level and NEPM investigation level.

The 95% UCL of all metals and metalloids were below respective NAGD screening levels and NEPM investigation levels. On this basis the sediment can be considered suitable for ocean disposal.



Table 3.1 Summary Statistics and 95% UCLs for trace metals and metalloids (mg/kg)

						(0 0)										
Sample	Al	Fe	Sb	As	Ca	Cr	Cu	Со	Pb	Mn	Ni	Se	Ag	V	Zn	Hg
Entrance Ch	nannel Area															
E1	1030	4080	< 0.5	1.54	< 0.1	3.7	1	1.8	1	61	2.2	< 0.1	< 0.1	7.5	4.8	< 0.01
E2	8750	18900	< 0.5	12.8	< 0.1	21.3	10.9	8.2	7.6	409	12.4	0.4	< 0.1	37.1	29.1	0.02
E3	1200	9370	<0.50	27.7	<0.1	4.5	1.1	3.3	1.6	286	2.6	<0.1	<0.1	26.4	4.6	<0.01
Inner Reach	– Port Area															
14	12500	25800	< 0.5	7.87	< 0.1	24.8	18.6	11.9	9.4	535	16.0	0.6	< 0.1	46.6	40.5	0.04
15	13400	27500	< 0.5	13.7	< 0.1	27.1	17.7	11.3	10.2	1100	16.4	0.6	< 0.1	49.5	41.3	0.04
16	13400	27400	< 0.5	9.17	< 0.1	27	21.1	11.9	10.4	729	16.8	0.6	< 0.1	50.3	43.7	0.04
Middle Read	ch – Port Area															
M7	13300	27150	<0.5	8.08	<0.1	27.8	22.8	12	10.6	648.5	17.7	0.6	<0.1	50.8	44.0	0.04
M8	13900	29500	< 0.5	10.3	< 0.1	27.7	21.6	11.4	11.3	448	17.3	0.6	< 0.1	50.0	47.7	0.05
M9	720	3960	< 0.5	2.25	< 0.1	2.6	< 1.0	1.9	< 1.0	35	2.0	< 0.1	< 0.1	6.2	4.6	< 0.01
Reference -	River															
RB1	840	3840	< 0.5	< 1.0	< 0.1	2.3	< 1.0	1.7	< 1.0	66	2	< 0.1	< 0.1	6.4	4.0	< 0.01
RB2	13200	28800	< 0.5	7.86	< 0.1	25.6	22.4	11.5	11.4	546	15.4	0.6	0.1	51.1	51.6	0.05
RB3	890	5390	< 0.5	1.48	< 0.1	3.7	1.6	2.9	2	248	4	< 0.1	< 0.1	9.3	7.5	< 0.01
RB4	1310	5170	< 0.5	2.11	< 0.1	4.7	1.9	2.7	1.6	292	3.5	< 0.1	< 0.1	9.9	7.7	< 0.01
RB5	3560	8960	< 0.5	3.8	< 0.1	8.5	4.7	3.8	3.2	144	5	0.2	< 0.1	16.3	14.1	< 0.01
RB6	3990	10400	< 0.5	4.26	< 0.1	9.3	5.4	4.4	3.5	204	5.8	0.2	< 0.1	17.7	16.1	< 0.01
RB7	4540	10100	< 0.5	4.03	< 0.1	10.4	7.2	4.8	3.8	172	6.8	0.2	< 0.1	20.1	18.3	0.01
Offshore – N	//RA	•														
OSG1	690	3740	<0.5	2.94	<0.1	3.1	1.2	1.8	<1.0	90	2	<0.1	<0.1	7.9	4	<0.01
OSG2	1310	5410	<0.5	4.43	<0.1	6	2.5	2.9	1.9	84	3.8	0.1	<0.1	12.9	8.7	<0.01
OSG3	870	7010	<0.5	2.7	<0.1	9.3	1.7	2.4	1.6	82	3.3	<0.1	<0.1	16.2	5.6	<0.01
Offshore – E	Background															
OSB1	560	3580	<0.5	20.0	<0.1	6	<1.0	2.1	1.1	93	1.9	0.1	<0.1	23.1	2.9	<0.01
OSB2	460	2470	<0.5	10.5	<0.1	4.2	<1.0	1.2	<1.0	41	1.3	<0.1	<0.1	13.8	2.2	<0.01
OSB3	740	3910	<0.5	13.9	<0.1	4.1	<1.0	1.4	<1.0	65	1.4	<0.1	<0.1	15.9	2.1	<0.01
Min	460	2470	<0.5	1.48	<0.1	2.3	1	1.2	1	35	1.3	<0.1	<0.1	6.2	2.1	<0.01
Max	14000	29500	<0.5	27.7	<0.1	29.5	24.6	12.6	11.4	1100	18.9	0.7	0.1	52.8	51.6	0.05
Mean	5411	13026	-	8.16	-	12.7	10.4	5.6	5.7	306	7.7	-	-	25.9	19.5	-
SD	1310	8960	-	6.55	-	10.4	9.2	4.4	4.3	282	6.6	-	-	17.6	18.2	-
RSD	5641	10476	-	80	-	82	89	78	75	92	85	-	-	68	93	-



Sample	Al	Fe	Sb	As	Ca	Cr	Cu	Со	Pb	Mn	Ni	Se	Ag	V	Zn	Hg
NAGD*	-	-	2	20	1.5	80	65	-	50	-	21	-	1	-	200	0.15
NEPM**	-	-	-	3,000	900	3,600	240,000	4000	1500	60,000	6,000	10,000	-	-	400,000	730
Key:						Above NAGD screening level							Above NEPM i	nvestigation	level	

Concentrations expressed as mg/kg

^{* =} screening values taken from the National Assessment Guidelines for Dredging (NAGD)

^{** =} investigation values taken from National Environment Protection Measures (NEPM)



3.3 Nutrients and Carbon Content

Nutrients and carbon content analysis was performed on all sediment samples (Table 3.2). Nutrients concentrations were broadly similar across the survey area, with a general trend of higher nutrient concentrations in samples with finer particle sizing. Similarly, TOC content ranged from 0.04 to 1.74 %, with higher TOC values recorded in samples with higher fines content. NAGD (2009) and NEPM do not provide screening or investigation levels for nutrients or TOC in bulk sediments. It is unlikely that nutrients or TOC content will be a constraint to marine placement.

Table 3.2 Summary statistics for nutrients and carbon content

Sample	Nitrite and Nitrate (mg/kg)	TKN (mg/kg)	TN (mg/kg)	TP (mg/kg)	TOC (%)		
		Entrance C	Channel Area				
E1	0.1	40	40	92	0.1		
E2	<0.1	1000	1000	352	1.13		
E3	0.1	100	100	236	0.1		
		Inner Reac	h – Port Area				
14	<0.1	1210	1210	485	1.37		
15	0.2	1660	1660	546	1.63		
16	<0.1	1430	1430	571	1.64		
		Middle Read	ch – Port Area				
M7	<0.1	1495	1495	512	1.65		
M8	<0.1	1560	1560	612	1.44		
M9	0.2	30	30	84	0.05		
		Referen	ce - River				
RB1	0.3	40	40	154	0.07		
RB2	<0.1	1680	1680	667	1.63		
RB3	0.8	50	50	154	0.04		
RB4	0.6	80	80	96	0.09		
RB5	0.2	360	360	223	0.34		
RB6	0.2	610	610	399	0.49		
RB7	<0.1	470	470	177	0.54		
		Offshor	e – MRA				
OSG1	<0.1	50	50	105	0.05		
OSG2	<0.1	160	160	183	0.24		
OSG3	<0.1	30	30	106	0.05		
	Offshore – Background						

Sample	Nitrite and Nitrate (mg/kg)	TKN (mg/kg)	TN (mg/kg)	TP (mg/kg)	TOC (%)
OSB1	<0.1	70	70	170	0.11
OSB2	<0.1	110	110	137	0.1
OSB3	<0.1	130	130	144	0.13
Min	<0.1	30	30	84	0.04
Max	0.8	1680	1680	667	1.74
Mean	-	603	603	292	0.64
SD	-	655	655	197	0.680
RSD	-	109	109	68	107

3.4 Hydrocarbons

3.4.1 Benzene, Toluene, Ethylbenzene and Xylene (BTEX)

Benzene, toluene, ethylbenzene and xylene (BTEX) were analysed in all sediment samples. BTEX concentrations were below the LOR in all sediment samples analysed across the survey area, therefore below respective screening levels.

3.4.2 Total Petroleum Hydrocarbons (TPHs)

Total petroleum hydrocarbon (TPH) concentrations within the C10 to C14, C15 to C28 and C29 to C36 carbon fractions were recorded at most locations within the inner reach, middle reach and entrance channel areas. The TPH carbon fraction C6 to C9 was below the LOR in all sediment samples within the survey area. The 95% UCL for TPHs C10 to C36 fraction was 126.5 mg/kg (normalised to 1% TOC), which is below the NAGD screening level of 280 mg/kg.

3.4.3 Polycyclic Aromatic Hydrocarbons (PAHs)

Low level detections of PAHs were recorded at all locations within the dredge areas, except for sites E1 and M9 (located in the entrance channel and middle reach, respectively). Total PAHs concentrations (corrected to 1% TOC) ranged from 24.1 ug/kg to 144.2 ug/kg, well below the NAGD screening level of 10,000 ug/kg.

3.5 Organotins

Monobutyltin (MBT), Dibutyltin (DBT) and Tributyltin (TBT) were analysed in all sediment samples obtained. MBT, DBT and TBT were below the LOR in all sediment samples analysed across the survey area, and therefore below respective screening levels.

3.6 Acid Sulphate Soils

Acid sulphate soil test results are presented in Table 3.3. All samples recorded pH potassium chloride (pH KCL) values ranging from 7.6 to 9.7 (neutral to alkaline), indicating there was no existing acidity present in the tested sediments. Furthermore, all samples had sulfidic titratable actual acidity (sTAA) values less than the LOR (< 0.02 %S).

All samples had chromium reducible sulphur values above the LOR, in the range of 0.015 to 0.32 %S, indicating low to moderate presence of inorganic potential acidity.



Results of acid neutralising capacity (ANC) ranged from 0.24 to 11.4% CaCO3. The mean ANC in the current survey was 2.22% CaCO3, which indicates sediments have a potentially high capacity to self-neutralise if exposed to oxygen. Net acidity (excluding ANC) ranged from <0.02 to 0.32%S, relating directly to the potential acidity as no actual acidity was recorded. The inclusion of ANC significantly reduces net acidity with all samples recording a net acidity value of less than the LOR (< 0.2%S). Notwithstanding this, the ANC values should be considered indicative only and require corroboration through leachate testing (~8 weeks) to validate.

Leachate was undertaken on all samples with net acidity (excluding ANC) values exceeding the action criteria. The leachate test results confirmed that except for M7, the ANC of samples would be sufficient to neutralise acid upon oxidation, i.e. no additional treatment would be required if material was placed on land for all samples except M7. Sample M7 had an ANC corroboration of 'no', indicating that the sediment at this location does not have sufficient capacity to self-neutralise, and therefore would require treatment utilising the liming rate excluding ANC.





Table 3.3 Acid Sulphate Soil results

Analyta		Actual Acidity	/	Potenti	al Acidity		Acid Neutralis.	ing Capacity				Acid Base	Accounting		
Analyte grouping/Analyte	pH KCI	Titratable Actual Acidity	sulfidic - Titratable Actual Acidity	Chromium Reducible Sulfur	acidity - Chromium Reducible Sulfur	Acid Neutralising Capacity	acidity - Acid Neutralising Capacity	sulfidic - Acid Neutralising Capacity	ANC Fineness Factor	Net Acidity	Net Acidity (acidity units)	Liming Rate	Net Acidity excluding ANC	Net Acidity excluding ANC	Liming Rate excluding ANC
Units	pH Unit	mole H+/t	% pyrite S	% S	mole H+/t	% CaCO3	mole H+ / t	% pyrite S	-	% S	mole H+/t	kg CaCO3/t	% S	mole H+/t	kg CaCO3/t
Entrance Channel A	Entrance Channel Area														
E1	9.6	<2	<0.02	0.022	14	1.08	217	0.35	1.5	<0.02	<10	<1	0.02	14	1
E2	8.8	<2	<0.02	0.32	200	7.84	1570	2.51	1.5	<0.02	<10	<1	0.32	200	15
E3	9.6	<2	<0.02	0.015	<10	7.12	1420	2.28	1.5	<0.02	<10	<1	<0.02	<10	<1
Inner Reach – Port	Area														
14	8.5	<2	<0.02	0.282	176	2.14	428	0.68	1.5	<0.02	<10	<1	0.28	176	13
15	8.6	<2	<0.02	0.225	140	5.32	1060	1.7	1.5	<0.02	<10	<1	0.22	140	10
16	8.4	<2	<0.02	0.255	159	3.01	602	0.96	1.5	<0.02	<10	<1	0.25	159	12
Middle Reach – Por	t Area														
M7	8.4	<2	<0.02	0.224	140	2.43	485	0.78	1.5	<0.02	<10	<1	0.22	140	10
M8	8.5	<2	<0.02	0.292	182	3.59	717	1.15	1.5	<0.02	<10	<1	0.29	182	14
M9	9.5	<2	<0.02	0.024	15	0.62	124	0.2	1.5	<0.02	<10	<1	0.02	15	1
Reference - River															
RB1	8.2	<2	<0.02	0.015	<10	0.24	47	0.08	1.5	<0.02	<10	<1	<0.02	<10	<1
RB2	7.6	<2	<0.02	0.255	159	2.03	406	0.65	1.5	<0.02	<10	<1	0.25	159	12
RB3	8.5	<2	<0.02	0.02	13	0.28	57	0.09	1.5	<0.02	<10	<1	0.02	13	<1
RB4	8.7	<2	<0.02	0.02	13	0.51	102	0.16	1.5	<0.02	<10	<1	0.02	13	<1
RB5	9.1	<2	<0.02	0.046	29	0.96	192	0.31	1.5	<0.02	<10	<1	0.05	29	2
RB6	9	<2	<0.02	0.044	28	1.01	201	0.32	1.5	<0.02	<10	<1	0.04	28	2
RB7	9	<2	<0.02	0.114	71	2.14	428	0.68	1.5	<0.02	<10	<1	0.11	71	5
Offshore - MRA															
OSG1	9.5	<2	<0.02	0.015	<10	1.38	275	0.44	1.5	<0.02	<10	<1	<0.02	<10	<1
OSG2	9.3	<2	<0.02	0.042	26	1.97	393	0.63	1.5	<0.02	<10	<1	0.04	26	2



Analyte		Actual Acidity	,	Potentia	al Acidity		Acid Neutralisi	ing Capacity				Acid Base	Accounting		
grouping/Analyte	pH KCI	Titratable Actual Acidity	sulfidic - Titratable Actual Acidity	Chromium Reducible Sulfur	acidity - Chromium Reducible Sulfur	Acid Neutralising Capacity	acidity - Acid Neutralising Capacity	sulfidic - Acid Neutralising Capacity	ANC Fineness Factor	Net Acidity	Net Acidity (acidity units)	Liming Rate	Net Acidity excluding ANC	Net Acidity excluding ANC	Liming Rate excluding ANC
Units	pH Unit	mole H+/t	% pyrite S	% S	mole H+/t	% CaCO3	mole H+ / t	% pyrite S	-	% S	mole H+/t	kg CaCO3/t	% S	mole H+/t	kg CaCO3/t
OSG3	9.5	<2	<0.02	0.016	<10	0.6	121	0.19	1.5	<0.02	<10	<1	<0.02	<10	<1
Offshore - Backgrou	nd														
OSB1	9.7	<2	<0.02	0.015	<10	8.87	1770	2.84	1.5	<0.02	<10	<1	<0.02	<10	<1
OSB2	9.6	<2	<0.02	0.019	12	10.6	2110	3.38	1.5	<0.02	<10	<1	<0.02	12	<1
OSB3	9.6	<2	<0.02	0.024	15	11.4	2270	3.64	1.5	<0.02	<10	<1	0.02	15	1

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yellow - Indicator of PASS



4 Data Validation

4.1 Laboratory QA/QC

Details of the laboratory QA/QC for the primary and secondary laboratories is provided in the following sections. Refer to Section 2.8 for a description of laboratory QA/QC procedures.

4.1.1 Limits of Reporting (LORs)

LOR was raised for the following parameters. Note LORs for all parameters were below the NAGD screening levels.

• EP132B-SD PAHs: LOR was raised due to high moisture content.

4.1.2 Sampling Holding Times and Storage Conditions

All samples were received by the laboratories in appropriately pre-treated and preserved containers. Samples were chilled with ice whilst in the field and during delivery (ice packs). Laboratory holding times were met for all samples except Sample I6 – moisture content, TRH, TPH, PAHs and BTEXN.

4.1.3 Laboratory Blanks

Results indicated that the laboratory blank assessment was within the acceptable criteria.

4.1.4 Laboratory Duplicates

Results indicate that the laboratory duplicate assessment was within the acceptable criteria.

4.1.5 Surrogate and Matrix Spikes

The assessment of surrogate and matrix spike recoveries was satisfactory for most samples. The exceptions were:

- EP090 Organotin Analysis: Sample 'RB2' (EB2435154-002) shows poor matrix spike recovery due to matrix interference.
- EP080 TRH Volatiles/BTEX: Sample EB2442840-004 shows poor matrix spike recovery due to matrix interference.

4.2 Field QA/QC

4.2.1 Field Triplicates and Splits

Analyses of field triplicate samples were within the NAGD criterion for RSDs or RPDs for all samples. Analysis for field split samples were within NAGD criterion for RSDs or RPDs for most samples, the exceptions listed below.

- Total Nitrogen (1490 to 7900 mg/kg; 102%)
- Total Kjeldahl Nitrogen (1490 to 7900 mg/kg; 102%)
- Sulfidic Acid Neutralising Capacity (0.67 to 6.4 %S; 122 %)



4.2.2 Summary of Data Validation

Results from the present study indicated that the survey was undertaken to a high standard providing scientific confidence that the presented results are valid to allow an assessment of sediment quality against NADG guidelines. Exceptions are discussed above and relate mostly to high sample heterogeneity and sample matrix interferences.



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Annex A SAP Design Document



Port of Bundaberg Maintenance Dredging 2024 SAP Design





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Acronyms

Acronym	Definition
AASS	Actual Acid Sulfate Soils
BGL	Below ground level
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CFM	Certified reference materials
CoC	Chain of custody
dGPS	Differentially corrected global positioning system
DESI	Department of Environment, Science and Innovation
DBT	Dibutyltin
DQls	Data Quality Indicators
EA	Environmental Authority
ECs	Emerging Contaminants
ERA	Environmentally Relevant Activity
GPC	Gladstone Ports Corporation Ltd
HTs	Holding times
LAT	Lowest Astronomical Tide
LMDMP	Long-term Maintenance Dredging Management Plan
LOR	Limit of Reporting
MDS	Maintenance Dredging Strategy
MRA	Material Relocation Area
NAGD	National Assessment Guidelines for Dredging
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Amendment Measure
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
РоВ	Port of Bundaberg
PASS	Potential Acid Sulfate Soils
PFAS	Per- and polyfluoroalkyl substances



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Acronym	Definition
PCBs	Polychlorinated Biphenyl
PQLs	Practical Quantification Limits
PSD	Particle size distribution
QA/QC	Quality assurance and quality control
QLD	Queensland
QASSTM	Queensland Acid Sulfate Soil Technical Manual
RPD	Relative Percent Difference (RPD)
SAP	Sediment Sampling and Analysis Plan
TBT	Tributyltin
TKN	Total Kjeldahl Nitrogen
TP	Total Phosphorus
TPH	Total Petroleum Hydrocarbons
TSHD	Trailing Suction Hopper Dredger
UCL	Upper confidence level





1 Introduction

1.1 Background

The Port of Bundaberg (PoB) is located 4.8 km upstream from the mouth of the Burnett River and 19.3 km downstream from the city of Bundaberg. Port Limits span 7.25 nm east of the port, 5.50 nm north of the port and 25.9 km upstream of the mouth of the Burnett River to the Branyan Barrage.

The PoB is owned and operated by the Gladstone Ports Corporation Ltd (GPC) and is one of Queensland's (QLD) 15 strategic ports providing an important hub and link for industry present in the Bundaberg Region. In the 2022/2023 financial year, the PoB recorded a throughput of 0.4 Mt (GPC 2023) and a total of 17 shipping movements (GPC 2024). Two (2) wharves are present at the PoB: the Sir Thomas Hiley Wharf handling sugar, gypsum, wood pellets, bulk liquids, molasses and silica sand and the John T. Fisher Wharf handling importation of molasses cargos. The PoB is also a first point of entry into Australia with guarantine and customs facilities present (GPC 2021).

Under the *Transport Infrastructure Act 1994* and the *Transport Operations (Marine Safety) Act 1994*, GPC conducts maintenance dredging at the PoB to provide and operate efficient port facilities and services by maintaining navigable depths within the port navigation areas (Section 1.3). To regulate the activity the Department of Environment, Science and Innovation (DESI) has granted GPC the Environmental Authority (EA) EPPR00571913 for Environmentally Relevant Activity (ERA) 16 - extractive and screening activities (dredging). Moreover, GPC manages maintenance dredging and placement activities at the PoB through a comprehensive Maintenance Dredging Strategy (MDS) framework. As part of the latter, GPC has obtained a new 10-year Federal Sea Dumping Permit (SD2023-4053) in September 2023 and developed a Long-term Maintenance Dredging Management Plan (LMDMP) which was also approved in 2023.

As part of the abovementioned framework and to follow relevant guidelines under the Sea Dumping Permit requirements, in particular the National Assessment Guidelines for Dredging 2009 (NAGD) (Commonwealth of Australia 2009), GPC prepares and implements a Sediment Sampling and Analysis Plan (SAP) every five (5) years. The aim of the SAP is to adequately characterise the physical and chemical characteristics of sediments within the channel maintenance footprint and at placement sites to ascertain their contamination status and suitability for sea and land placement.

The latest SAP at the PoB was undertaken in 2019. The present document constitutes the first part of the PoB 2024 Maintenance Dredging SAP and thus the design document falling within the required five (5) yearly timeframe interval under the NAGD.

1.2 SAP Design Document Objectives

The aim of this SAP design document is to provide a set of procedures that will allow a statistically robust and valid evaluation of the physical and chemical properties of the sediments to be dredged at the PoB in line with the NAGD (Commonwealth of Australia 2009). The results of this assessment will allow to determine the suitability of sediment for unconfined sea placement at the offshore Material Relocation Area (MRA) or onshore MRA. The assessment of physio-chemical sediment properties will be undertaken in accordance with the relevant standards and guidelines including:



- NAGD (Commonwealth of Australia 2009), defining sampling intensity and methodology as well as the suitability of sediment for offshore placement;
- Queensland Acid Sulfate Soil Technical Manual soil management guidelines v5.1 (QASSTM)
 (Dear et al. 2024) and the National Guidelines for the dredging of acid sulfate soil (ASS) sediments
 and associated dredge material (Simpson et al. 2018). These are the key documents to be followed
 when assessing the risk of acid sulfate generating potential for land-based placement through
 screening against related action criteria; and
- National Environment Protection (Assessment of Site Contamination) Amendment Measure 1999 (NEPM) (DCCEEW 2013).

Following the NAGD framework (refer to Figure 3 in Commonwealth of Australia 2009), this SAP provides a Phase I and II assessment of sediments. Specific SAP design objectives are:

- Provide a summary of proposed dredging and placement or operations for the proposed works;
- Review and summarise Burnett River catchment land use activities with the potential to constitute pollution sources able to affect sediment quality and in turn dredged material;
- Identify a list of contaminants based on a review of existing data and potential contaminant sources;
- Determine the number of samples required to provide an adequate characterisation of the physical and chemical sediment properties in the entire area to be maintained;
- Collect sufficient sediment samples to fully characterise the sediment layer to be dredged;
- Maintain rigorous sample handling, transport and storage processes to ensure sample integrity and high-quality data;
- Establish data quality objectives relating to quality assurance and quality control (QA/QC) standards and requirements;
- Outline adequate QA/QC procedures for field sampling and laboratory analysis;
- Provide a description of statistical procedures used to determine the contaminant status of the dredged material;
- Describe procedures for validating the analytical data to assess whether the sample collection, handling and laboratory analysis was undertaken to a standard allowing assessment of sediment quality against the appropriate NAGD and NEPM screening levels; and
- Outline the proposed reporting framework for the sediment quality results that will address the requirements of the Determining Authorities.

Sediment quality investigations at the PoB have occurred in 1987, 1995, 1999, 2000, 2004, 2009, 2014 and 2019, in all instances sediments were found to be suitable for unconfined sea placement. As minimal changes to the catchment have occurred and no significant new sources of contamination are present since 2019, it is anticipated that sediments will be below respective screening levels and again suitable for unconfined sea placement. However, if the results from Phase II record exceedances of respective guidelines and screening levels, the investigation might progress to Phases III-V of the NAGD with further sampling and testing to ascertain the suitable relocation methodology.

1.3 Maintenance Dredging Activity Description

Current port navigation areas at the PoB are divided into Inner, Middle and Sea Reaches (Figure 1.1). These areas include:



- Shipping channel, 103 m wide and 10 km long with a minimum navigable depth of 9.5 m Lowest Astronomical Tide (LAT);
- The shipping channel leads into a swing basin 1,165 m in length, 320 m in width and with a minimum navigable depth of 8.0 m LAT; and
- An Insurance Trench is present adjacent to the Sir Thomas Hiley Wharf, with a minimum depth of 12.5 m LAT. The latter was developed in 2021 and 2022 with two (2) small port development campaigns where 30,000 m³ of sediments were removed in total. The Insurance Trench is now included in the maintenance dredging footprint as per new abovementioned permits. Note that the inclusion of this area into the dredging footprint has not resulted in an increase of maintenance dredging requirements.

To be consistent with previous SAP studies, the Inner and Middle Reaches will be classified as the Port Area whilst the Sea Reaches will be classified as the Entrance Channel Area. Furthermore, upstream reference sampling locations outside the dredging footprint will also be included in this SAP (Section 3) and classified as the River Area whilst offshore MRA and areas adjacent to it will be classed as Offshore Area (Section 3.1).

It is important to consider that during a typical year, sedimentation above design depths occurs predominantly within the Inner Reaches due to fluvial inputs (GPC 2021). Dredging typically focuses on removing up to 1 m of sediments from locations within this area as well as the Sea Reaches and thus the Entrance Channel Area where sediments are deposited by longshore sediment transport (Section 2.2).

To maintain navigable depths within the navigational infrastructure, GPC utilises the Trailing Suction Hopper Dredger (TSHD) Brisbane, owned and operated by the Port of Brisbane Pty Ltd (PBPL). Maintenance dredging at the PoB is usually performed in annual campaigns where up to approximately 90,000 m³ of sediment is removed in accordance with the aforementioned 10-year Sea Dumping Permit (Section 1.1). Emergency dredging might also be required and performed by the TSHD Brisbane in response to significant sedimentation resulting from flood events such as in 2010, 2011, 2013 and 2018.

1.4 Disposal Description

Under the EA EPPR00571913, GPC can relocate maintenance dredged material to the designated MRAs on sea or land. The preferred and most common placement solution for maintenance dredged material at the PoB is sea placement within the designated and approved offshore MRA (Figure 1.1). This activity is regulated by the above-mentioned permit which details conditions for the loading and placement of material removed at the PoB within the offshore MRA. The latter lies within port limits and is circular in shape with a radius of 0.5 nm (926 m), centred around the decimal degrees coordinate - 24.703972 152.472444 (GPC 2021). Land disposal at the onshore MRA is instead only undertaken when sea placement is not practicable.



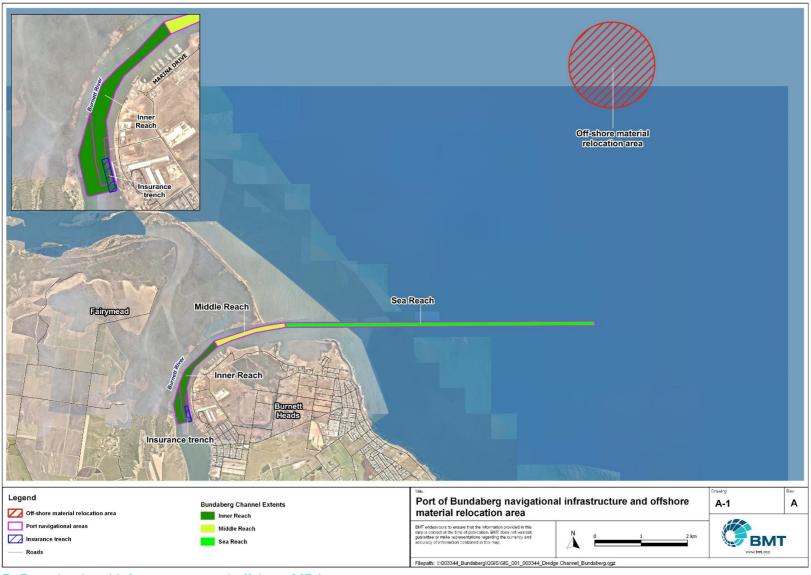


Figure 1.1 PoB navigational infrastructure and offshore MRA





2 Review of Existing Information

As per Phase I of the NAGD, the following sections review and evaluate existing information relating to sediment particle size distribution (PSD) and sediment dynamics within the PoB, Burnett River catchment land uses and potential pollution sources as well as recent sediment investigation and related findings. This information informed the sampling design, contaminants list and other aspects of the SAP design described in Section 3.

2.1 Sediment Dynamics

Under the PoB maintenance dredging framework and related documents such as the 2023 LMDMP, GPC has undertaken several studies to gain a better understanding of the sediment transport and resuspension processes within the PoB and how these relate to maintenance dredging requirements and activities (GPC 2021). An understanding of these processes is also important and relevant to the present study. Hydrodynamic processes (waves, tidal currents, fluvial input) control patterns in sediment deposition, erosion and re-suspension, and therefore, the sediment types found at loading sites (GPC 2021).

The Burnett River is the primary source of new sediments that accumulate in PoB navigation areas. The sediment loads received from this source are highly variable depending on river conditions. Existing sediments are also naturally resuspended by tidal currents in the river (Port Area), and by tidal currents and waves in the offshore region (Entrance Channel area) which are the two (2) dominant processes for sediment transport in the region. Fine-grained sediment transported by these processes is likely to be regularly reworked by tidal currents and thus deposited during neap tides and resuspended during spring tides until it is deposited in a location experiencing consistent calm conditions (GPC 2021).

2.2 Sediment PSD

Sediment PSD data collected as part of the SAPs undertaken from 2004 to 2019 were summarised and discussed in the 2023 LMDMP (GPC 2021). In a typical year and thus under normal conditions, sediment in the Inner and Middle Reaches is characterised by clays and silts, varying from 0.15 m to 1 m in thickness, overlaying coarser material such as sands whilst sandier sediments dominate in the Sea Reach

Following flood events, sediment type within the Port Area shifts to a coarser grain size, particularly in the Inner Reach where sand and gravel become the dominant proportions. Conversely, an increase in finer sediments is recorded within the Middle and Sea Reaches.

2.3 Burnett Catchment Uses and Potential Pollution Sources

The Burnett catchment is the largest catchment in the Burnett Mary region covering an area of 33,207 km² (Figure 2.1). The catchment records average rainfalls of 688 mm a year which result in river discharges to the coast of about 1076 GL (State of Queensland 2018). The Burnett River receives waters from the whole catchment. Land use within the Burnett catchment is dominated by grazing (77%) followed by forestry (12%) and nature conservation (4%) (Figure 2.1) with extensive areas of sugarcane and horticulture in particular near the coast surrounding the PoB and around the city of Bundaberg (State of Queensland 2018).

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Other potential sources of pollution include local sewage treatment plants, urban stormwater runoff from the Bundaberg and surrounding townships and industry (Bundaberg Regional Council 2024). However, these are not deemed significant sources including industry which is not a dominant sector in the Bundaberg region with only few industries present, including at the PoB where only shipping of the abovementioned materials (Section 1.1) and production of plasterboard occurs.

The current land use within the Burnett Catchment and other potential pollution sources highlighted in this section are not considered to have a significant impact on the contamination of sediment within PoB. In fact, these potential sources are consistent with historic ones highlighted in previous sediment characterisation studies (BMT 2022; Future Plus 2019; AMA 2018; Nearshore Marine Science 2014) none of which has indicated and reported sediment contamination within the PoB.

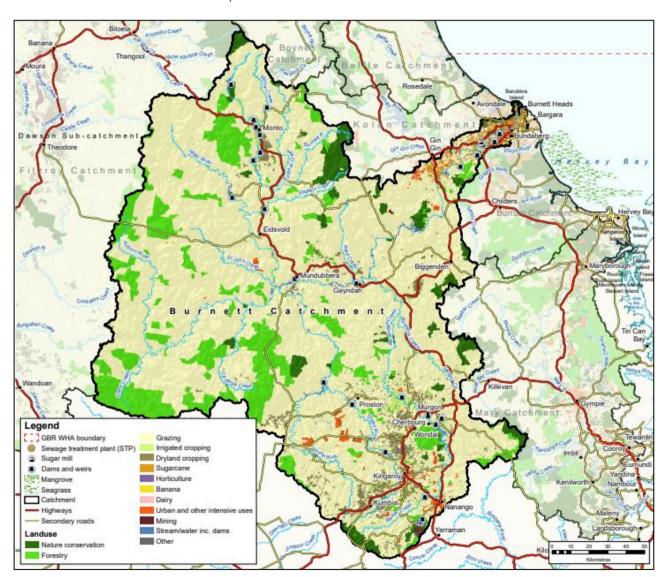


Figure 2.1 Burnett Catchment land uses

2.4 Recent Sediment Quality Investigations

In accordance with NAGD, the most recent SAP conducted in 2019 will be the primary focus of this section, as it is less than five (5) years old and therefore qualifies as good quality data. Furthermore, in 2022 a supplementary SAP was conducted focusing on newly emerging contaminants (ECs), nutrients, and the general characterisation of sediments within the offshore MRA and areas adjacent to it.



Previous SAPs (AMA 2018; Nearshore Marine Science 2014) will also be considered to provide an indication of temporal patterns.

Results from the 2019 SAP (FPE 2020) implementation report showed that:

- PSD results were consistent with previous SAPs results and followed patterns described in Section 2.2;
- Metals and metalloids statistical assessment included minimum and maximum values and the 95% upper confidence level (UCL) of the mean. All maximum concentrations of metals and metalloids in the Port and Entrance Channel Area were below NAGD screening levels;
- Organotins (Monobutyltin (MBT), Dibutyltin (DBT) Tributyltin (TBT)) were analysed and assessed as
 described above. All samples recorded organotin concentrations below the laboratory Limit of
 Reporting (LOR); and
- Despite not required under the NAGD, sediment were also tested for ASS in case onshore material relocation was proposed and/or required by GPC. The Port and Entrance Channel sediments were found to be Potential ASS (PASS), but they did not contain Actual ASS (AASS). Sediments in these areas were found to have Acid Neutralising Capacity (ANC) in the form of shells and coral fragments.

It is important to note, that as part of the 2014 SAP (Nearshore Marine Science 2014), the same contaminant list was adopted, results showed that the 95% UCL calculated for all contaminants were below NAGD screening levels. The only exemption was a site (DC16) in the Channel Entrance Area where Arsenic concentrations were above the screening level. This was consistent with results of the 2004 and 2009 SAP which returned exceedances of this metalloid in the same area. The 2012 Long-term Management and Monitoring Plan (WorleyParson 2010) concluded that Arsenic concentrations in the area derive from natural origin and correlate with clay and silt sediments and unlikely to become bioavailable.

During the new Sea Dumping Permit application process, some gaps in information were identified by GPC with an additional SAP conducted in 2022 to rectify the matter. This SAP conducted a pilot for ECs, which had not been sampled previously, as well as sampling organotin compounds from PoB dredge areas, offshore MRA and background locations (offshore adjacent to the MRA and River Area). Moreover, this study characterised offshore MRA and areas adjacent to it, collecting samples that were analysed for metals and metalloids, nutrients, hydrocarbons and organotin compounds (BMT 2022). The following results were reported:

- Patterns in sediment physical properties were in line with previous SAPs in samples from dredging areas whilst sediments from sampling locations at and adjacent to the offshore MRA were dominated by sandy fractions;
- Some nutrients such as nitrate + nitrite were either below or detected near the LOR. However, Total Kjeldahl Nitrogen (TKN) and Total Phosphorus (TP) were above the LOR and higher in dredge areas than background sites. BMT (2022) reported that this was a reflection of the higher mud content in dredge areas compared to sandier offshore and river reference sites. It was recommended to include nutrients in the contaminant list of future SAPs. Moreover, appropriate background selection i.e. sites characterised by fine sediment was suggested to allow meaningful comparison. It is important to consider that no screening values exist for nutrients in sediments with the NAGD;

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- Samples collected from the offshore MRA and background sites adjacent to it returned concentrations of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs) and Polychlorinated Biphenyl (PCBs) below LOR. The Total Petroleum Hydrocarbons (TPH) fraction C₆-C₉ was also below LOR in all samples whilst the C₁₀-C₁₄, C₁₅-C₂₈ and C₂₉-C₃₆ fractions were detected in most samples, but well below the screening level of 550 mg/kg.
- Organotin compounds (MBT, DBT and TBT) were below LOR in all samples collected from the offshore MRA and background areas;
- Pesticides and per- and polyfluoroalkyl substances (PFAS) were below LORs in all samples collected from dredge areas, offshore MRA and background sites. As a result, BMT (2022) recommended not to include these contaminants in future SAPs contaminant list; and
- Dioxins and furans were detected at all sites, which is typical of Australian aquatic sediments (Müeller et al. 2004). Similar to inorganic nutrients, elevated levels were found at background River Area sampling sites and all dredge sample locations. Concentrations analysed were within those seen in other Queensland catchments. It was recommended to not include Dioxins and Furans in future SAP contaminant lists.

Moreover, as the Insurance Trench is now included in the port maintenance footprint, it is important to consider that the SAP undertaken in 2018 to characterise sediments in this area reported all contaminant concentrations in sediments to be below NAGD screening levels with the exception of nickel (Ni) (AMA 2018). However, dilute acid extraction investigations undertaken by previous studies reported this metal to be tightly bound to the sediments particles and of little consequence biologically (WorleyParsons 2010). AMA (2018) also reported that this type of finding is commonly associated with Ni that is from a terrigenous source rather than anthropogenic ones.

2.5 Potential Contamination Classification

Based on the above section and review of existing information and previous SAP data, the sediment within the PoB dredge areas and thus the Port and Entrance Channel Areas are deemed 'probably clean' in line with the NAGD classification (Commonwealth of Australia 2009).

To summarise, arguments in support of this determination are:

- All historical sediment investigations to date show that sediments within the dredge footprint are suitable for unconfined sea placement, corroborating the above statement;
- Catchment area land use and potential contamination sources remain largely unchanged compared to previous SAPs and are unlikely to significantly contribute to sediment contamination; and
- Review of the 2019 and 2022 SAPs (Future Plus 2020; BMT 2022) constitute good quality data (in line with the NAGD definition) and show that sediment was clean and suitable for unconfined sea placement within the approved offshore MRA. No parameters had concentrations above NAGD screening levels.

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30 August 2024





3 Sampling And Analysis

3.1 SAP Design Rationale

The proposed PoB 2024 maintenance dredging SAP has been designed in accordance with NAGD, previous SAP designs and knowledge gained from extensive studies conducted at the PoB as part of maintenance dredging and related framework (Section 1.1). Information from these documents and studies was used to select the most appropriate sampling methodology, number of samples and list of contaminants to ensure compliance.

3.2 Sampling Locations and Number

The dredge footprint will be divided into the areas outlined in Section 1.3 with sampling effort and the number of samples per area allocated according to the 2019 and 2022 SAPs (Future Plus 2019; BMT 2022). The division includes sampling of the offshore MRA and adjacent locations. Details on the proposed number of sampling location per area are provided in Table 3.1 and Table 3.2.

In accordance with Table 6 of the NAGD (Commonwealth of Australia 2009), for a volume of potentially contaminated material to be dredged between 83,000 – 92,000 m³, as is the case for the PoB, 17 sampling locations would be required. However, as outlined in Section 2 and summarised in Section 2.5, sediments within the areas to be dredged are classified as "probably clean" according to the NAGD classification. Therefore, the number of sampling locations within the dredging footprint (Port and Channel Areas in the case of the PoB) can be halved to nine (9) (rounded up) (Commonwealth of Australia 2009).

In the Port and Entrance Channel Areas, the same number of sampling locations will be used as in previous SAPs, with six (6) locations for the Port Area and three (3) locations for the Entrance Channel Area. Locations and numbers at River background and Offshore MRA and areas adjacent to it will also be as per historical SAPs (Future Plus 2019; BMT 2022). In fact, NAGD recommends sampling at least seven (7) sites in the offshore environment to help characterise the ambient environment and set screening levels for contaminants without prescribed limits. However, this is only relevant where the offshore sediment has comparable properties to those of the dredging areas. This is not feasible for the Port of Bundaberg, as offshore sediment is notably different from river sediment (Future Plus 2020; BMT 2022). Therefore, seven (7) riverine sites upstream of the port will be used as the primary background sites while offshore sites will serve as reference sites only. This approach is consistent with the additional SAP 2022 undertaken in 2022 (BMT 2022).

There is a need to ensure that sediment types at riverine background sites are representative of the material present in dredged areas. The riverine background sites sampled in 2019 and 2022 SAP (Future Plus 2020; BMT 2022) were mainly characterised by sand and gravel (>80%) except at Site 2 which was comprised by a clay and silt (>90%). It is therefore expected that adjustments to the position of background riverine sites will be required to provide adequate, representative samples of fine sediments (approximately three (3) or four (4) sampling sites). Any variation from the historical sampling locations will be appropriately documented, highlighted and explained in the SAP Implementation document in line with Section 3.5.1 and Section 3.11.





Table 3.1 Proposed number of samples per area

Study area	Historic sample location number	Proposed sample numbers per area	Sample identifiers per area
River (background locations)	7	7	1-7
Port (Inner and Middle Reaches)	6	6	8-13
Entrance Channel (Sea Reach)	3	3	14-16
Offshore (MRA and adjacent to it)	6 (3 inside MRA and 3 adjacent to it)	6	17-22

Table 3.2 Provisional sample locations and related details

Sample ID	Study area	Easting	Northing
RB1		428,620	7,248,815
RB2		435,190	7,250,408
RB3		436,394	7,252,712
RB4	River – Background	435,320	7,255,787
RB5		437,066	7,257,067
RB6		437,619	7,258,811
RB7		437,587	7,259,787
E1		440,064.5	7,262,112
E2	Sea Reach - Entrance Channel Area	440,781	7,262,147
E3		444,579.6	7,262,148
14		437,302	7,260,107
15	Inner Reach – Port Area	437,429.6	7,260,343
16		437,699.2	7,261,349
M7		438,260.8	7,261,788
M8	Middle Reach – Port Area	438,862.6	7,261,948
M9		439,465	7,262,136
OSG1		446,221	7,268,172
OSG2	Offshore MRA	447,125	7,267,852
OSG3		446,420	7,267,268
OSB1		446,269	7,265,580
OSB2	Offshore - Background	446,420	7,267,268
OSB3		446,269	7,265,580



Following the NAGD guidelines, sample locations were selected by laying a square grid over the dredge area with at least five (5) times the number of grid squares as the required number of sampling locations. Sample locations were chosen using a random number generator and applied to cell numbers. Cells that fell outside the footprint were moved into the footprint's nearest point. Maps of the proposed sampling locations are shown in Figure 3.1 whilst provisional coordinated are shown in Table 3.2.

3.3 Sampling Methodology

Grab sampling will be performed to collect all samples, from dredge and reference sites. A Van Veen grab with gape size of 0.18 m² and dimensions of 300 mm x 300 mm x 300 m collecting approximately 10-15 kg of sediments from up to 30 mm below ground level (BGL) will be utilised. The grab and related sampling methodology will follow the NADG, with the grab being of a minimum gape size of 0.02 m², stainless steel, free of grease or corrosion, appropriately pre-cleaned and washed clean between samples. Upon collection, grab samples will be examined for integrity with only samples obtained from grabs with fully closed jaws retained and thus any instance where the grab does not close fully will require re-sampling.

This methodology has been selected in line with NAGD principles (refer to Appendix D of Commonwealth of Australia 2009) as sediments within the PoB are deemed to be mixed continually. Sediment dynamics studies (Section 2.1) report that particularly fine sediments, to which contaminants tend to bind (Williamson and Morrisey, 2000), deposited by fluvial inputs or longshore transport are regularly reworked by tidal currents. Moreover, the PoB navigational areas are frequently dredged (Section 1.3) with moderate shipping and general vessel traffic (Section 1.1) contributing to mixing sediments. Therefore, samples obtained with this methodology will be representative of the entire dredge depth which is one (1) m BGL (Section 1.3).

3.4 Quality Control Samples

The following field and laboratory quality control samples will be obtained:

- Field duplicate samples (5% of locations) (additional core samples at randomly selected locations) to determine the small-scale variability of the sediment's physical and chemical characteristics. At each field duplicate sample location, two (2) separate cores/grabs will be collected;
- Duplicate split samples (5% of locations) (sample numbers as per Table 3.1) where sediments will be thoroughly mixed and split into two (2) sample containers set to assess laboratory variation, with one (1) of the two (2) samples sent to a second (reference) laboratory for analysis; and
- One (1) trip blank container per sampling day will be filled with inert material (e.g. chromatographic sand) to be analysed concurrent with the analysis of volatile organic substances.
- One (1) rinsate blank container (equipment blank) per sampling day to assess potential contamination from equipment.



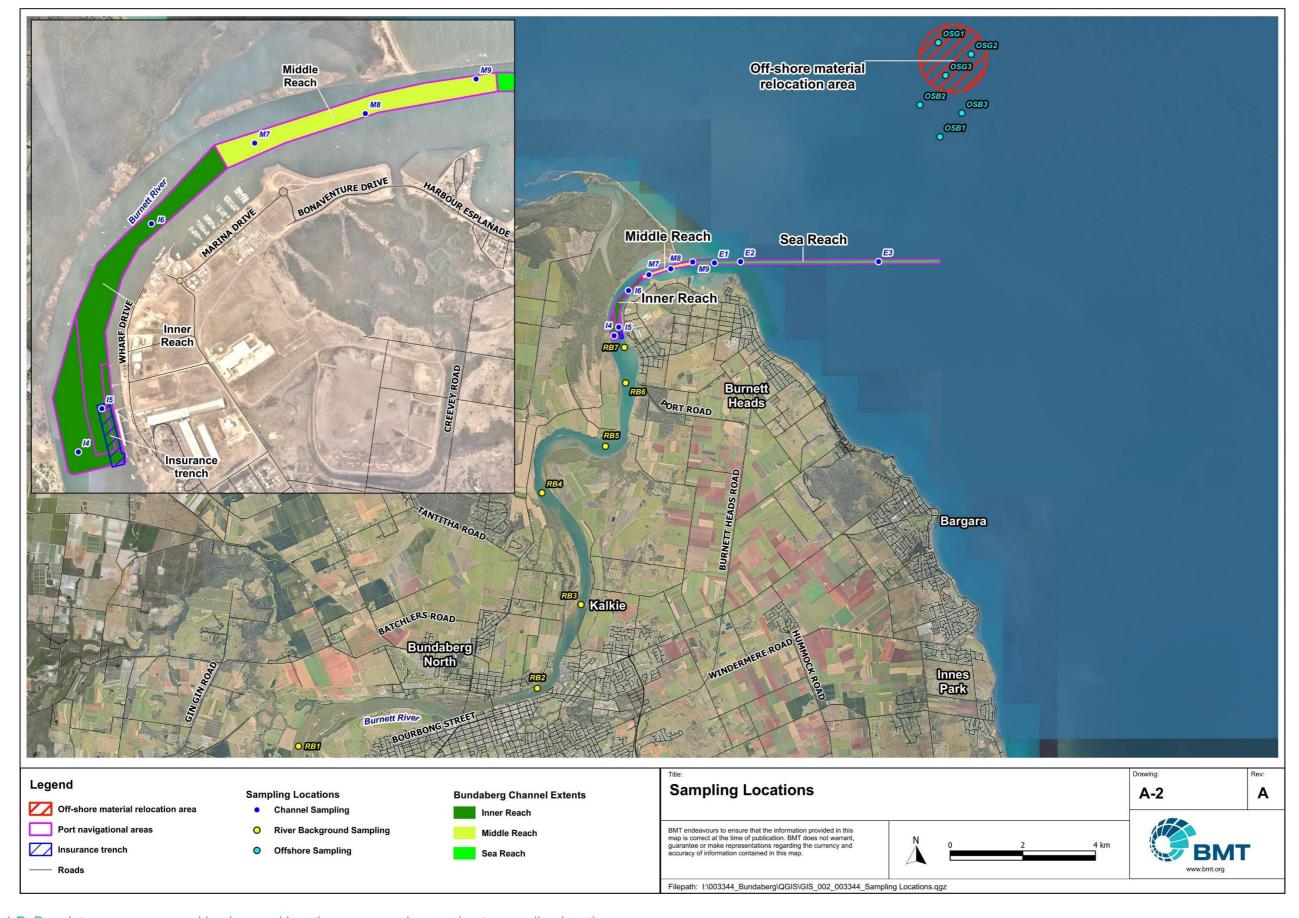


Figure 3.1 PoB maintenance areas and background locations proposed approximate sampling locations

3.5 Sample Collection Methodology

Vessel and Field Personnel

The vessel to be used as the platform for the sampling and processing will be a registered commercial vessel and will be operated by a suitably qualified skipper, and will include:

- At least 2D certification for partially smooth or 2C survey for outside of partially smooth waters;
- A differentially corrected global positioning system (dGPS) with an accuracy of approximately ±1 m;
 and
- On-board depth sounder with an accuracy of ± 0.25m).

Field work will be undertaken by appropriately qualified sediment quality scientists and field technicians experienced in undertaking marine sediment quality studies.

3.5.1 Sampling Methodology and Equipment

Sediments will be collected using a Van Veen grab, refer to Section 0 for full details. Any instances where the grab sampler does not close fully due to coarse samples or any debris, will require resampling.

The sampling device will be thoroughly cleaned with De-con 90 solution prior to use and cleaned and rinsed with seawater between sampling locations to prevent cross contamination between samples.

An appropriate number of samples will be obtained from each sampling location and composited to collect sufficient volume of sediment for all analyses.

Sample Handling and Chain of Custody

Sample management procedures will include:

- Careful collection of sediment samples from the grab, following the recovery of the sediment sample from the seabed;
- Photographs of the grab samples will be taken and field personnel will note each grab for its
 physical characteristics and variations in sediment type and texture (Section 0). The grab sample
 will be emptied and collected in a clean, stainless steel bowl for homogenisation prior to filling of the
 analytical laboratory-supplied clean sampling jars;
- Sample identifiers will be numbers as per Figure 3.1 and Figure 3.1, with QA/QC samples blind-labelled to ensure that the laboratories cannot relate the QA sample back to the primary sample.
- All sample handling and processing will be performed to minimise contamination and sample mixups;
- All sample equipment will be cleaned prior to sample collection and in between sampling sites using a scrub with decontamination solution followed by a rinse with seawater (Section 3.5.1);
- The workspace on the vessel will be washed down regularly with ambient seawater to clean all surfaces and minimise the potential for contamination of samples. All sample processing will be undertaken away from any potential contamination sources such as engine exhausts, fuels, oils, greases, lead weights, zinc anodes, antifouling paint etc.
- Nitrile gloves will be worn by all field personnel handling the sediment, and gloves will be disposed of after processing of each core sample;

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- Utmost care will be maintained in ensuring that risk of cross-contamination between samples is minimised. Samples collected from each location will be placed into appropriately cleaned and preserved containers provided by the analytical laboratories, which will be labelled prior to filling; and
- Following sample processing and filling of sample containers, all samples will be immediately
 chilled. The chilled samples will be submitted to the laboratory under appropriate chain of custody
 (CoC) documentation to ensure that the sample possession and processing can be traced from
 sample collection to reporting of results.

Grab Sample Logs

Upon collection, all sediment grab sample characteristics and details will be logged on appositely developed field forms. The following information will be recorded:

- Project name and number;
- Date and time of sampling;
- Sampler's name;
- Field sample number;
- Northing and Easting of sample location (from onboard dGPS);
- Sediment colour;
- Sediment odour;
- Field texture (fine sand, silt, clay, sand, clay/sand);
- Tidal predictions and water depth at sample location (derived from onboard depth sounder);
- Weather and sea state conditions at the time of sampling; and
- General comments: presence of organic matter, benthic organisms, shells etc.

3.6 Health and Safety and Contingency Plan

Health and Safety

As samples will be collected within the PoB navigational channel, appropriate measures must be implemented in order to avoid any incident and/or disruption of shipping and vessel movements. The vessel skipper will implement appropriate seamanship procedures and radio contact with during sampling.

At each sampling location, grab sampling will require approximately 10 minutes then the vessels can move outside the shipping channel, as necessary and dependent upon shipping movements, to allow field sampling personnel to complete sample logging and processing.

A single anchor may be used to anchor the vessel, alternatively stern anchors may also be used, if necessary. The main anchor would be placed upstream and upwind of the vessel. A marker buoy may be placed on the anchor if required.

The sampling vessel will display appropriate flags (R over Y and/or circle diamond circle) for the work being carried out at all times. Interactions with other vessels will be minimised by being mindful of approaching vessels.



Adverse Weather

Regular checking of available weather forecast services for the study area will be undertaken during field sampling. There are no unusual hazards in operating the grab sampler in wet weather.

In case of adverse weather conditions such as strong winds and high waves that would make conditions in the Burnett River rough and sampling impractical and potentially dangerous, the sampling team and vessel operator will remain on stand-by until weather conditions improve to allow rigorous and safe collection of sediment samples.

Equipment Failure

The grab sampler and any other equipment utilised will be sufficiently robust to afford good operation and no failure of the equipment is expected to occur during the sampling. Prior to sampling, all equipment will be thoroughly checked and repaired if necessary. A secondary GPS and tools to fix minor problems equipment will be taken on the vessel in the event of gear failure.

In the unlikely event of equipment failure during sampling, repairs to any equipment would be undertaken as soon as possible to minimise delays as far as practical. The area where sampling will be undertaken is near Burnett Heads and Bundaberg where replacement equipment, including an alternate vessel, could be sourced if required.

3.7 Contaminants List

In line with NAGD, the contamination list was formulated to include:

- Toxic substances known, from previous investigations, to occur in dredge area sediments at levels greater than one-tenth of the Screening Levels; and
- Based on the historical review, substances potentially present at such levels in the sediments to be dredged.

Based on the review of existing information (Section 2), particularly the sediment investigations conducted in 2019 and 2022 (Section 2.4), the contaminants list will be as detailed in Table 3.3. Justification for including these contaminants is as follows:

- Metals and metalloids, with the exception of Antimony, Cadmium and Silver, were found in concentrations above one-tenth of the NAGD screening levels (FPE 2020);
- Organotin compounds were found below LORs or equal to the LOR (FPE 2020). However, despite
 being low there is a risk these compounds may occur at concentrations exceeding one-tenth
 screening levels particularly in the Port Area due to shipping;
- Some nutrients had higher concentrations in dredge areas than in background sites (BMT 2022).
 However, whilst sampling sites in the dredge footprint were mainly characterised by clay and silt,
 riverine and offshore background sites were mainly sand and gravel. Following recommendations
 from the 2022 SAP, nutrients will be included in the contaminant list. Background sites will be
 selected carefully to include sediments with similar physical properties than those found in the
 dredge footprint (muddy sediments) providing a more meaningful comparison (Section 2.4 and 3.2);
 and
- Due to TPHs being found in most samples (offshore MRA and areas adjacent to it only) during the 2022 SAP (BMT 2022), they will be included in the contaminant list as they could potentially also occur particularly in the Port Area due to shipping.



Other analytes not required under the NAGD will be included to provide information on the sediment physical characteristics and gain understanding on the presence of ASS/PASS should sediment be disposed of on land (Section 1.4):

- PSD, moisture content and Total Organic Carbon; and
- ASS analysis.

Table 3.3 Contaminant List, Target Practical Quantification Limits (PQLs), Guideline Screening Levels and Level of Investigation

Parameter	Target PQL	Screening Level	Level of Investigation	
Basic Characteristics				
PSD	63 to 0.002 mm	-		
Moisture Content (%)	0.1	-	All Samples	
Total Organic Carbon (%)	0.1	-		
	Metals and Metalloids	(mg/kg)		
Antimony	0.5	2 ¹		
Arsenic	1	20 ¹		
Cadmium	0.1	1.5 ¹		
Chromium	1	80 ¹		
Copper	1	65 ¹	All Camples	
Lead	1	50 ¹	All Samples	
Mercury	0.01	0.15 ¹		
Nickel	1	21 ¹		
Silver	0.1	1 ¹		
Zinc	1	200 ¹		
	Organotin Compounds (μgSn/kg)		
MBT, DBT, and TBT	1 µg/kg³	9 μg/kg¹	All samples	
	Organics (mg/kg	1)		
TPH	100	280 ²		
TPH Fractions	10-100	-		
BTEX	0.2	10 (Benzene) ³ 65 (Toluene) ³ 40 (Ethylbenzene) ³ 1.6 (Xylenes) ³	All Samples	
PAHs	0.005 (0.1 for sum)	10,000 ²		
Nutrients (mg/kg)				
Total Nitrogen as N	20	-	All samples	
Total Kjeldahl Nitrogen as N	20	-	ļ	



Parameter	Target PQL	Screening Level	Level of Investigation
Total Phosphorus as P	1	-	
Nitrate and Nitrite as N	0.1	-	
	Acid Sulfate Pote	ential	
Chromium Suite	2 mole H+/tonne	Liming rate based on Table 4.2 (Dear et al. 2014)	All samples (excluding background locations)
Slab/Chip Tray Incubation test (for ANC)	0.1 pH unit	As per Slab Incubation Method NLM-8.1/ Chip Tray NLM-8.2	Undertaken on samples if initial net acidity results (less ANC) are greater than action criteria (0.03 %S / 8 mol H+/t)

Table notes:

Based on a review of existing information (Section 2.4), several parameters were excluded from the contaminant list. As described in Section 2.3, the catchment area land use and potential pollution sources have not changed since previous SAPs, and are therefore relevant in the context of refining the contaminant list.

The following parameters were excluded from contaminant list:

- PFAS were sampled in the 2022 additional SAP and were below LOR in all samples (BMT 2022).
 Furthermore, the only known activity and potential source of PFAS present in the catchment ceased several years ago with no new potential sources since (Section 2.3);
- Pesticides, Organochlorine Pesticides (OCPs), Organophosphorus Pesticides (OPPs) and PS-II
 herbicides were below LOR in all samples in the 2022 SAP. Moreover, OCPs have also been tested
 as part of historic investigations and found below PQL (WorleyParson 2010); and
- Dioxins and furans were sampled as part of the additional SAP conducted in 2022 and found in concentrations in line or below the national average for estuarine sediments (Müeller et al. 2004).
 Moreover, there are no sediment quality guideline values for comparison that would apply to Australian sediments.

¹ National Assessment Guidelines for Dredging NAGD (2009) (Commonwealth of Australia 2009)

² Updated screening levels as per Simpson et al., (2013)

³ National Environment Protection (Assessment of Site Contamination) Measure April 2011 (DCCEEW 2013)



3.8 Laboratory Analysis

Analytical Laboratories

The primary and secondary analysis of sediment samples will be undertaken by National Association of Testing Authorities (NATA) accredited analytical laboratories holding accreditation for the required analyses.

Both laboratories will follow laboratory QC procedures in accordance with requirements outlined in Appendix F of NAGD. This includes analysis of laboratory blanks, duplicates, certified reference materials (CFMs) and spiked samples. Further information on laboratory protocols and related indications are highlighted in Table 3.4.

Analytical Tests and PQLs

For all parameters listed in the contaminants list, samples must be analysed to meet PQLs outlined in Table 3.3.

Sample Containers

Sample volumes will be specified by the laboratory performing the analysis. Large cobble and gravel fragments should be removed from the sample prior to storage in containers. Based on the proposed analyses, the following sample containers would be required per sample:

- 2 x 250 mL glass jar organic/inorganic chemical analysis;
- 1 x 125 mL glass jar nutrient analyses;
- 1 x medium plastic clipseal bag (50-100 g) PSD; and
- 1 x small clipseal bag (200 g) ASS.

Laboratory Data Quality Indicators

The data quality indicators that the laboratory will aim to achieve are as per Table 3.4.

Table 3.4 Laboratory data quality indicators

Indicator	Frequency	Acceptance Criteria		
PRECISION (a quantitative measu	PRECISION (a quantitative measure of the data variability)			
Lab duplicates (separate subsamples from jar, not aliquot splits)	1 per batch or 20 samples	<5 x LOR = no limit on Relative Percent Difference (RPD). >5 x LOR = 0-50% RPD*		
ACCURACY (a quantitative measu	re of the closeness of reported data	to the true value)		
Matrix spikes Matrix spike duplicates	1 per lab batch or 20 samples 1 per lab batch or 20 samples	Recovery 70% - 130% for inorganics/metals, 60-140% for organics, or as per lab requirement ## RPDs should be less than 35%		
Surrogate spikes	All organic analyses	Recovery 70% - 130% for inorganics/metals, 60-140% for organics, or as for lab requirement ##		
Lab method and reagent blanks	1 each per batch	= LOR</td		

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Indicator	Frequency	Acceptance Criteria		
PRECISION (a quantitative measure of the data variability)				
Control samples	1 per lab batch or 20 samples	Recovery 70% - 130% or as for lab requirement ##		
Analysis of CRMs (for metals) or in-house standards certified against CRMs	All sediment metal analyses, 1 per batch	<+/- 35% RPD, recovery 70% - 130% or as per lab requirement		
REPRESENTATIVENESS (qualitati medium)	ve confidence that data obtained are	e representative of each sampled		
Sample handling and storage appropriate for media/analytes	All media, all analytes	All samples		
Holding times (HTs)	All samples	All samples extracted and analysed within HTs		
COMPARABILITY (qualitative confi	dence that data collected in separate	e sampling events is equivalent)		
Standard analysis methods	All samples	All samples subsampled, extracted/ digested & analysed at NATA-certified labs, by standard methods		
LORs consistent between labs and batches	All samples	All samples		
LORs met for all analytes**	All samples	All samples		
Outliers and inter-lab discrepancies resolved	Affected samples	Affected samples re-extracted and analysed in replicate		
COMPLETENESS (the amount of u	seable data, as a % of total data col	lected. Goal is 95% or more valid		
All critical locations sampled, all required samples collected, and all samples analysed according to this SAP	All samples	All required data obtained		
COC field logs, sample descriptions and sample location data complete	All samples	All samples		
Samples received at laboratory as specified on COC forms	All samples	All bottles and jars received and unbroken, seals intact and samples cool		
QC samples sufficient, and acceptable results	All QC/QAs	100%		
SENSITIVITY (ability of analysis me concentrations)	ethods to reliably determine the analy	ytes at lowest environmental		
Analysis methods and LORs appropriate for media, expected background levels of analytes and adopted site assessment criteria	All media, all analytes	All samples		



Indicator	Frequency	Acceptance Criteria	
PRECISION (a quantitative measure of the data variability)			
SECONDARY DATA (quality assessment of any pre-existing data to be used in this project)			
All secondary data	All pre-existing data	Establish Data Quality Indicators (DQIs) and assess data quality	

[#] Certain inhomogeneous samples, eg fine, clayey or organic-rich sediments, samples through mangrove root zones, algal mats etc, as well as samples for analysis of volatiles and semi-volatiles, must not be homogenised in the field prior to subsampling. Therefore, sample replicates are distinct samples rather than splits. Such replicates may not meet this DQI.

Lower recoveries may be recorded for some semi-volatile organics, such as phenols. Recoveries may also be lower, and the spread wider, on some sediments and soils due to matrix interference from high water content, high salinity, plant waxes, sterols, lipids etc.

- * Contaminant concentrations become increasingly uncertain as they approach the method detection limit. Criteria:
- Result < 5 times the LOR no limit to RPD or RSD.
- Result > 5 times the LOR RPD or RSD should be </= 50% (or </= 35% for lab replicates).
- ** Occasionally, matrix effects may prevent this. Any such incidences must be documented by lab.

3.9 Data Analysis and Sediment Quality Assessment

Concentrations of contaminants measured in sediment samples will be compared to screening levels as described in Table 3.3. Those being Table 2 of NAGD in the first instance for all samples (Commonwealth of Australia 2009), and subsequently, Table 1A(1) and Table 1B(6) of the NEPM Volume 2 Schedule B1, to determine whether the material is acceptable for placement at sea or on land (DCCEEW 2013).

Specifically, mean concentrations of chemical parameters at the 95% UCL will be compared to screening levels described in Table 3-3. The statistical analysis will follow the approach given in Appendix A of NAGD. This will inform whether the material is appropriate for placement at sea.

An assessment of the material's suitability for land-based re-use (if required) will follow the statistical analysis and the data evaluation procedures in Section 3.4, Volume 5 Schedule B4 of the NEPM. In the event that 95% UCL for particular contaminants are exceeded, the next steps would be to follow the decision tree in Volume 1, Schedule A of the NEPM to determine a site remediation plan or collect further data describing the nature of contamination.

Given the lack of contamination history in past and present data elsewhere in the PoB, the probability of guideline exceedance is considered low.



3.10 Data Quality Objectives and Validation

As part of this SAP, the aim if for data quality and information collected to be suitable for undertaking an assessment of dredge material contamination in accordance with the framework provided in the NAGD. To achieve this aim, PQLs and data quality objectives and indicators outlined in Table 3.5 must be met.

The data quality objectives include:

- Data validation objectives: all laboratory analyses will be validated in accordance with Appendix A of NAGD (which are specific to marine sediments) to confirm suitable data quality for undertaking a rigorous characterisation of the proposed dredge material. This will involve an assessment of the following:
 - Sample holding times and storage conditions;
 - Laboratory blanks, duplicates and surrogate/matrix spikes; and
 - Field triplicates samples, triplicate sample splits and trip blank.
- Completeness objective: at least 95% of all data received should be validated as suitable for use.
- COC form objectives: completed forms shall accompany the samples.
- Laboratory sample receipt objectives: the laboratory shall provide written confirmation on whether:
 - The sample names/numbers received agree with chain-custody forms;
 - Samples were received intact;
 - Samples were received at specified temperature; and
 - Samples were received within appropriate holding times.

3.11 Reporting

Following SAP design document approval by the relevant Determining Authority, the SAP will progress to the implementation stage with field sampling undertaken. The reporting of sediment quality results will be undertaken in a SAP Implementation Report including the following components:

- Summary of the SAP;
- Outline of potential problems encountered and deviations from the approved SAP, including appropriate and comprehensive justification;
- Description of the sampling carried out, along with the actual sampling locations, sample numbers (including QA/QC samples), completed COC forms, field logs and description of sediments;
- Comparison of the 95% UCL of the mean chemical concentrations of sediments against the appropriate screening levels described in Table 3.3 Screening will be presented in a clear tabulated format and discussed as appropriate and required;
- Assessment of QA/QC procedures for both field and laboratory data;
- Data validation including comparison to data quality objectives;
- Conclusions regarding the acceptability of dredge material for unconfined sea and/or on shore placement; and
- Appendices including all laboratory and field data, photos and statistics.



Table 3.5 Summary of data quality indicators and objectives for data validation

Indicator	Frequency	Acceptance Criteria
PRECISION (a quantitative measu	re of the data variability)	
Sampling methodologies	All samples	Appropriate and complied with
Intra-lab duplicates/splits	5% of samples	<+/- 50% RPD*
Inter-lab duplicates/splits	5% of samples	<+/- 50% RPD*
Trip blanks/spikes (volatiles only)	1 per sampling	= LOR for blanks, as per lab spec for spikes</td
ACCURACY (a quantitative measu	re of the closeness of reported data	to the true value)
Collection of rinsate blanks for re- used sampling or subsampling equipment	Where equipment re-used, one sample per day per item of equipment	CoCs below detection limit
Sampling methodologies	All samples	Appropriate and complied with
REPRESENTATIVENESS (qualitation medium)	tive confidence that data obtained a	re representative of each sampled
Sampling, subsampling, sample handling and storage appropriate for the history and contamination status of the sediments, the study objectives and the media/analytes	All media & all analytes	All samples collected and handled according to SAP
COMPARABILITY (qualitative conf	idence that data collected in separa	te sampling events is equivalent)
SAP for sample collection, subsampling and handling. Same methods used each day; same types of samples collected	All samples	All samples collected and handled in accordance with SAP, by experienced professionals
COMPLETENESS (the amount of data)	useable data, as a % of total data co	ollected. Goal is 95% or more valid
Chain-of-Custody forms (COCs), sample descriptions and sample location data complete	All samples	All samples
All critical locations sampled; all samples collected	All samples	All samples collected & analysed according to SAP
Completeness objective met (ie percentage of data suitable for use, 95% of all data)	All data	Minimum 95% of all data on submitted samples validated as suitable for use
Methodologies	All samples	Sampling in accordance with NEPM, 2011 and/or NAGD, 2009, and other relevant standards for marine sampling, as appropriate

^{*} Contaminant concentrations become increasingly uncertain as they approach the method detection limit, and therefore DQOs may not be met for analytical values close to LORs. Laboratories often use the following approach (or a variation of it) to assess replicates:

Result < 5 times the LOR – no limit to RPD or RSD.

Result > 5 times the LOR – RPD or RSD should be <1 = 50%.



4 References

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Port of Bundaberg Maintenance Dredging 2024 SAP Implementation OFFICIAL

Annex B Sediment Photolog





























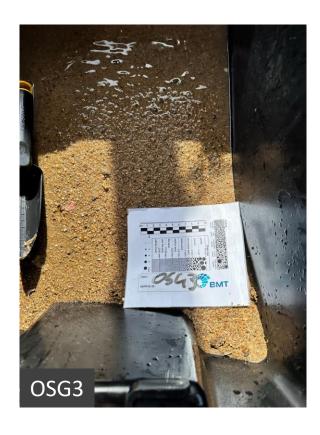


















Port of Bundaberg Maintenance Dredging 2024 SAP Implementation OFFICIAL

Annex C Primary Lab - ALS



CERTIFICATE OF ANALYSIS

Work Order : EB2435154

Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Contact : Freddie Pastorelli

Address : PO BOX 203 SPRING HILL

BRISBANE QLD 4004

Telephone : 07 3831 6744

Project : 003344 PoB (Bundaberg) 2024 SAP

Order number : -

C-O-C number : 73252

Sampler : ANGUS WILLIAMS, FELIX REYNOLDS

Site : Port of Bundaberg
Quote number : EB24BMTWBM0013

No. of samples received : 19
No. of samples analysed : 19

Page : 1 of 31

Laboratory : Environmental Division Brisbane

Contact : Nathan King

Address : 2 Byth Street Stafford QLD Australia 4053

Telephone : +61-7-3552-8685

Date Samples Received : 11-Oct-2024 13:20

Date Analysis Commenced : 15-Oct-2024

Issue Date : 24-Oct-2024 16:37



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	
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD	
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW	
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD	
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Soil Preparation, Stafford, QLD	
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD	
Tatijana Markoska	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD	
Vincent Muller	Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD	
Vincent Muller	Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD	

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

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.

- ^ = 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.
- EP132B-SD conducted by ALS Sydney, NATA accreditation no. 825, site no 10911.
- EA150H: Soil particle density results fell outside the scope of AS1289.3.6.3. Results should be scrutinised accordingly.
- 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.
- 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.
- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual. Department of Agriculture and Water Resources. Canberra. ACT (2018)
- EP132B-SD: LOR is raised due to high amount of moistures is present.
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- EG020-T (Total Metals): High LCS recovery for antimony deemed acceptable as all associated analyte results are less than LOR.
- EP090 Organotin Analysis: Sample 'RB2' (EB2435154-002) shows poor matrix spike recovery due to matrix interference.
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.

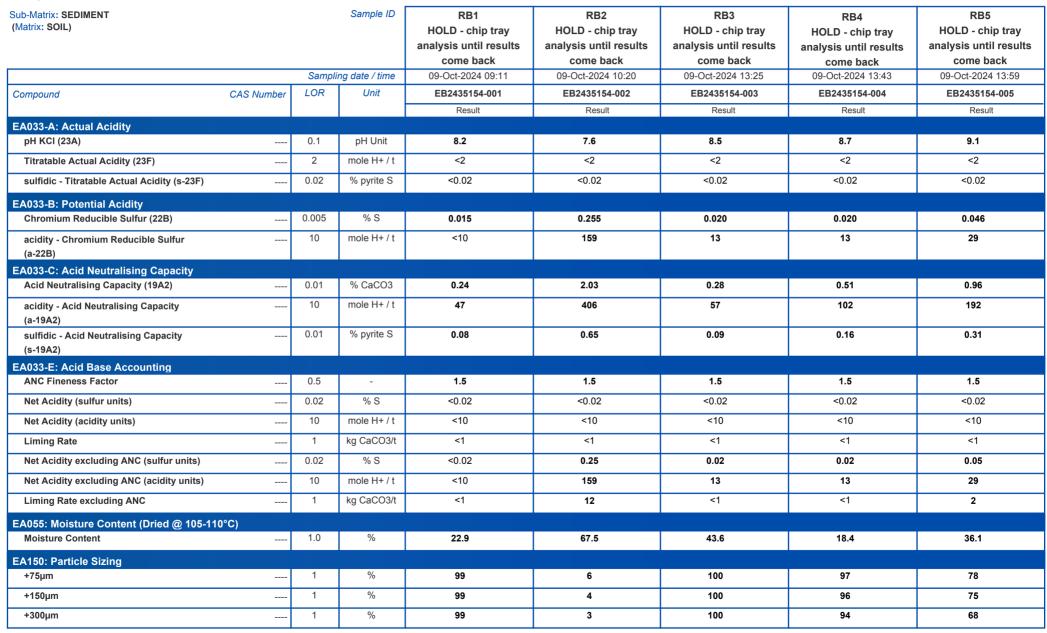


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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

Analytical Results



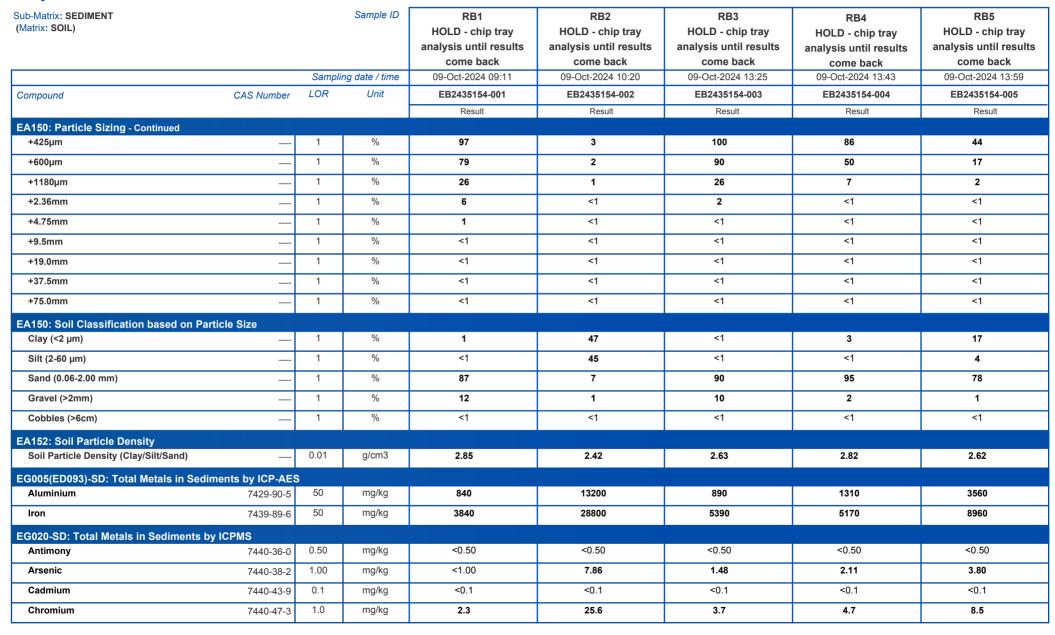


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Analytical Results



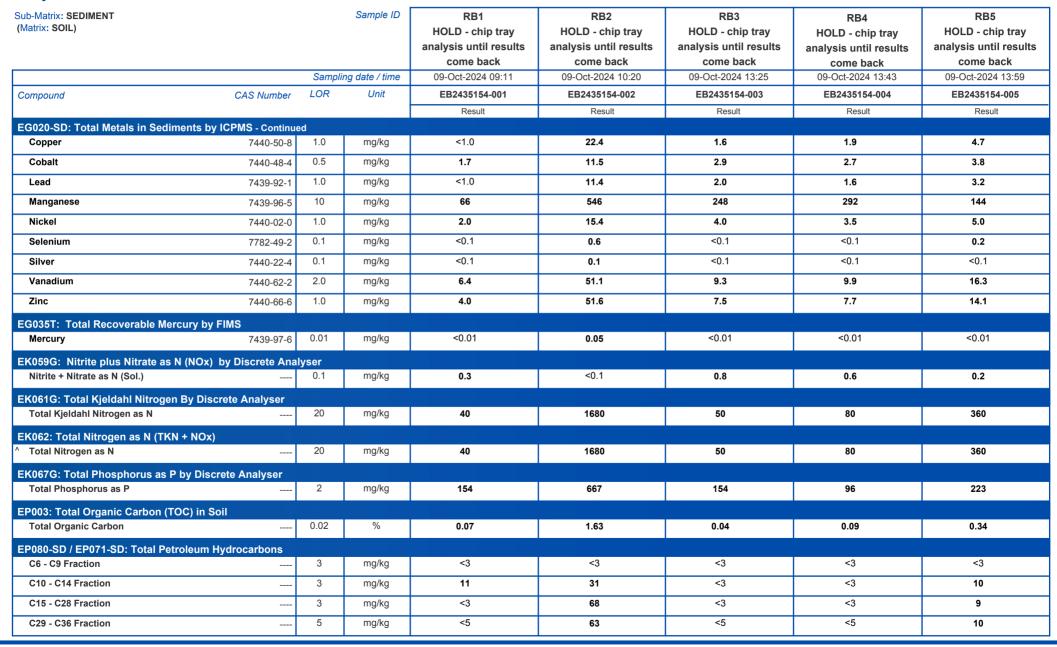


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Project : 003344 PoB (Bundaberg) 2024 SAP

Analytical Results

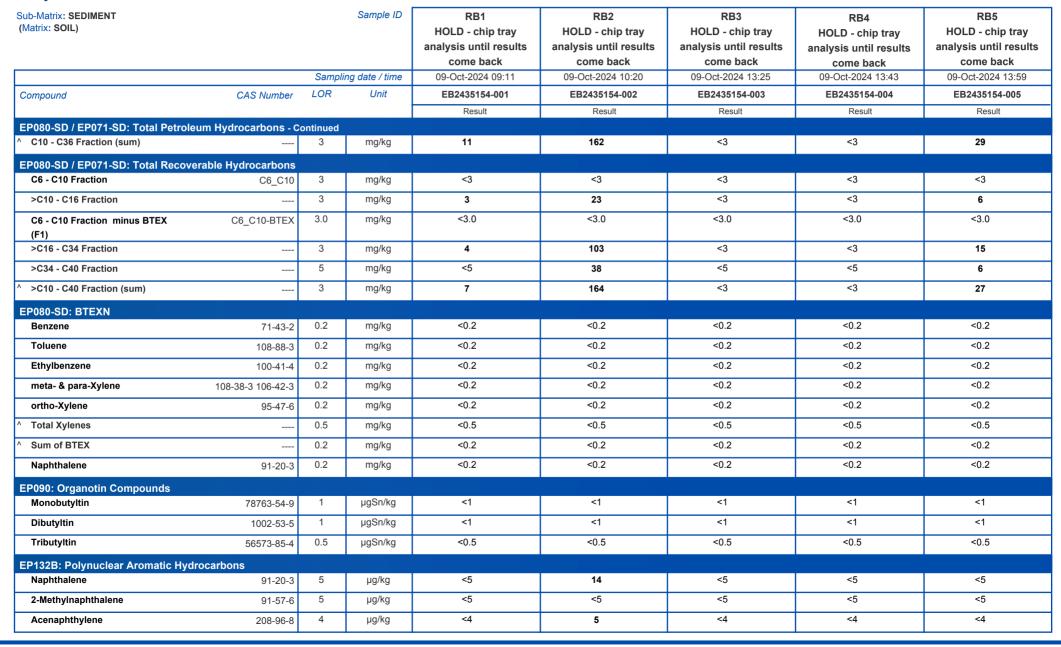




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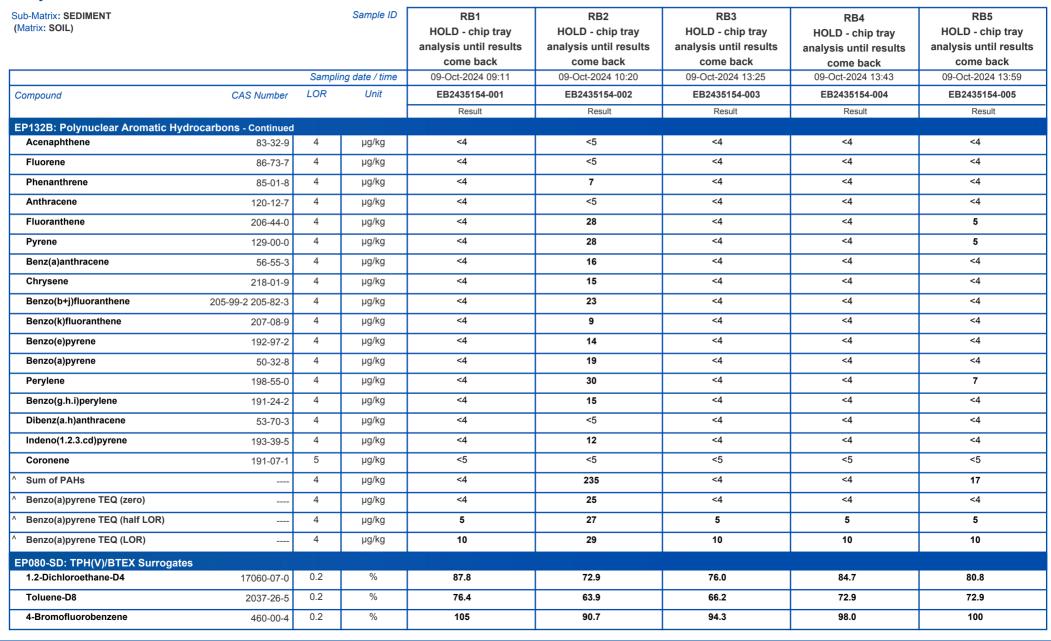




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Project : 003344 PoB (Bundaberg) 2024 SAP

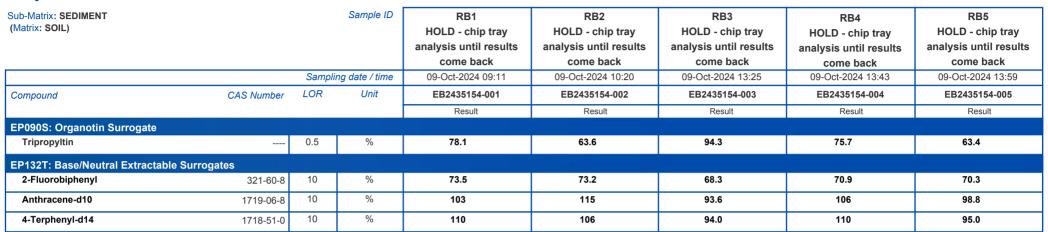




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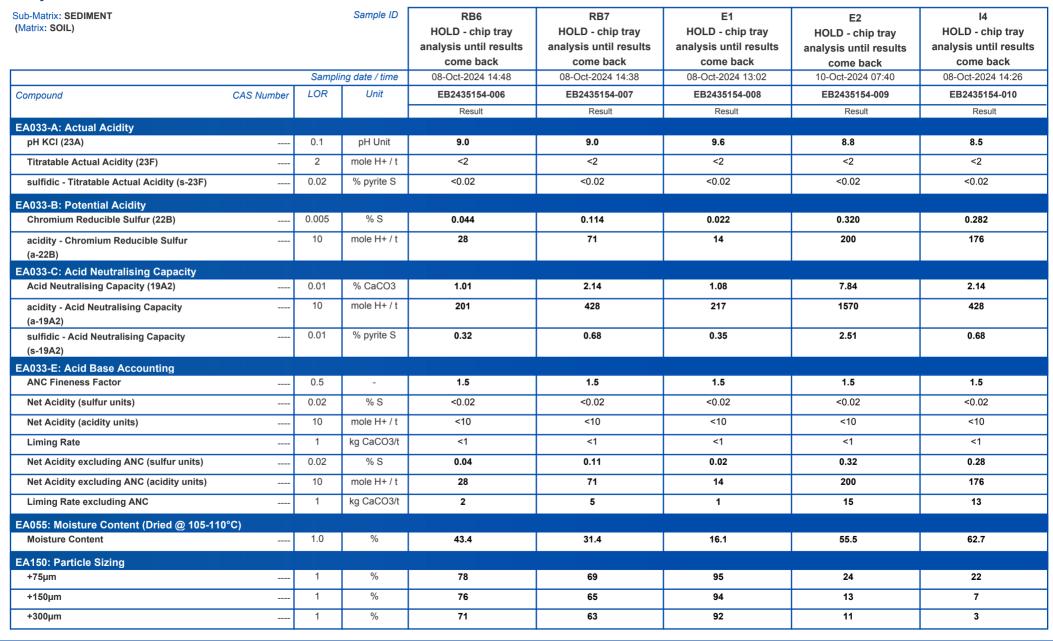




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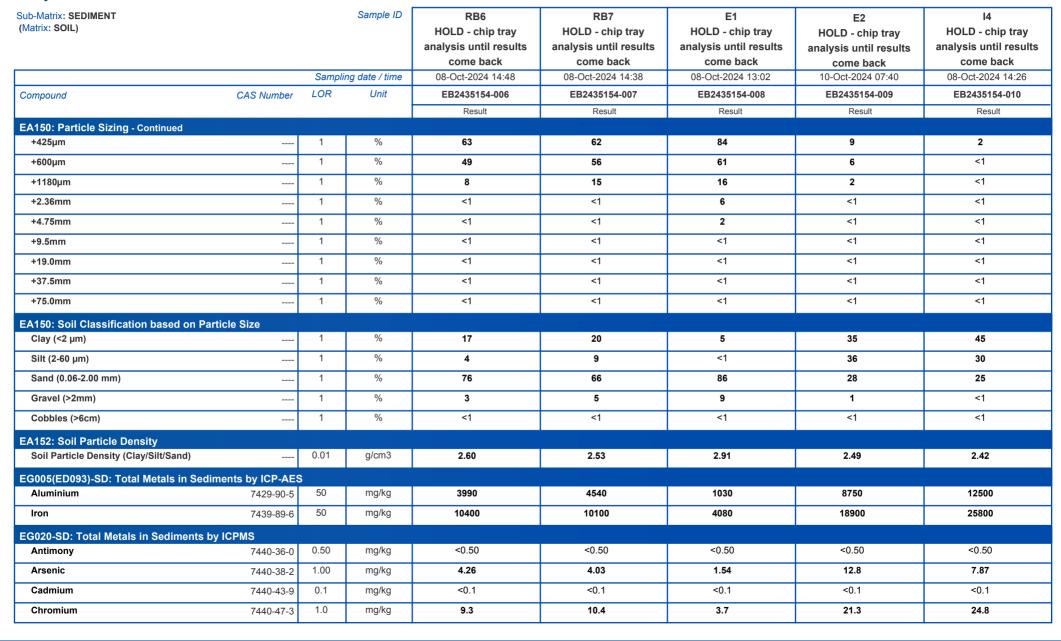




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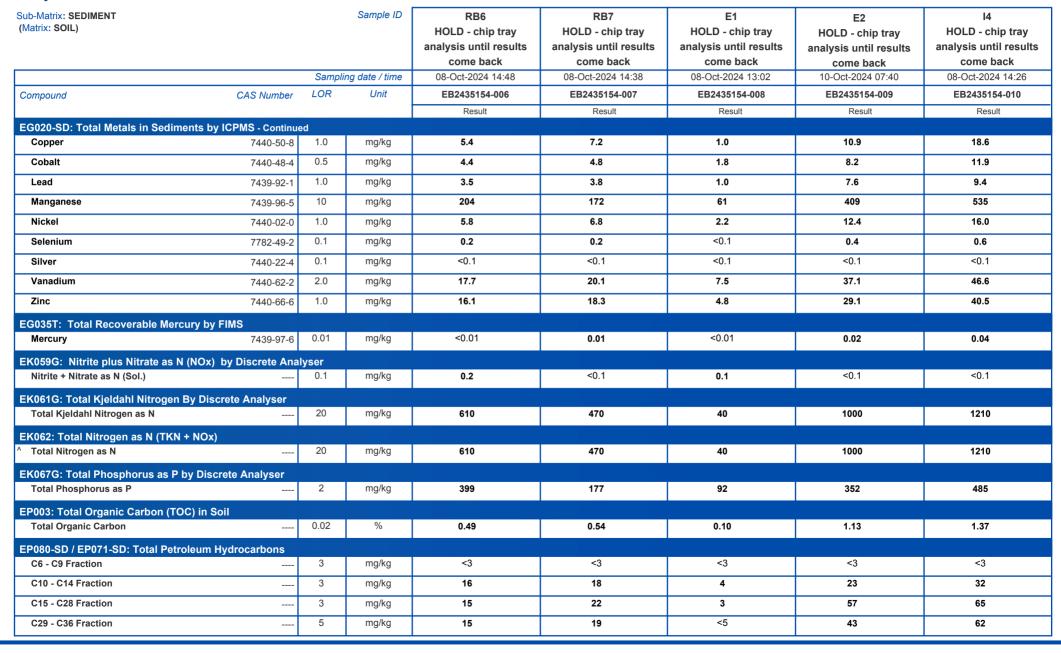




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Project : 003344 PoB (Bundaberg) 2024 SAP

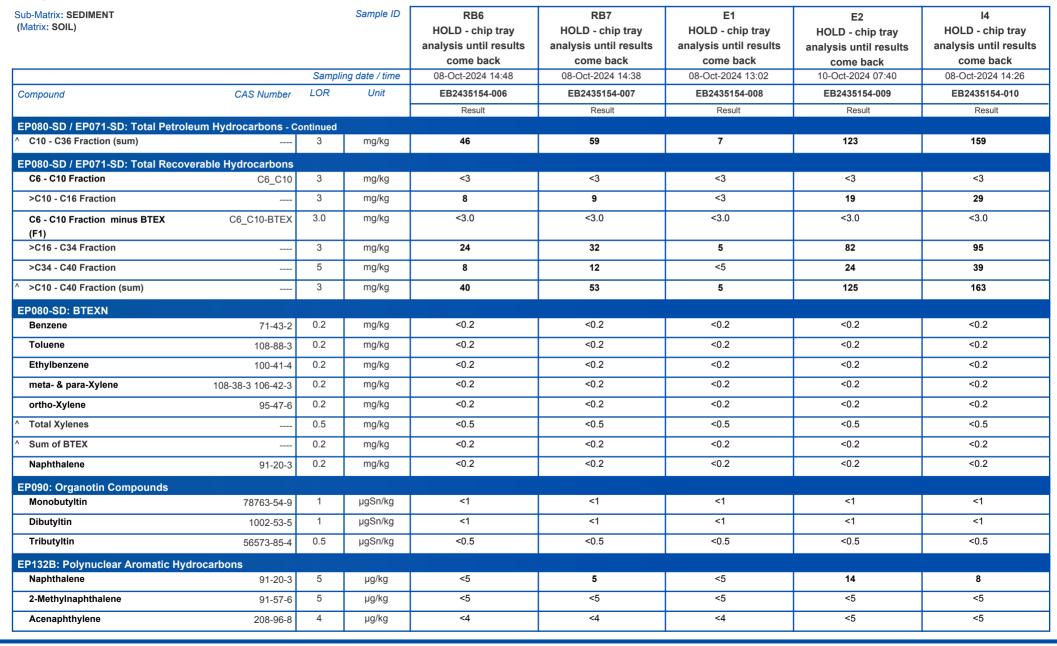




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Project : 003344 PoB (Bundaberg) 2024 SAP

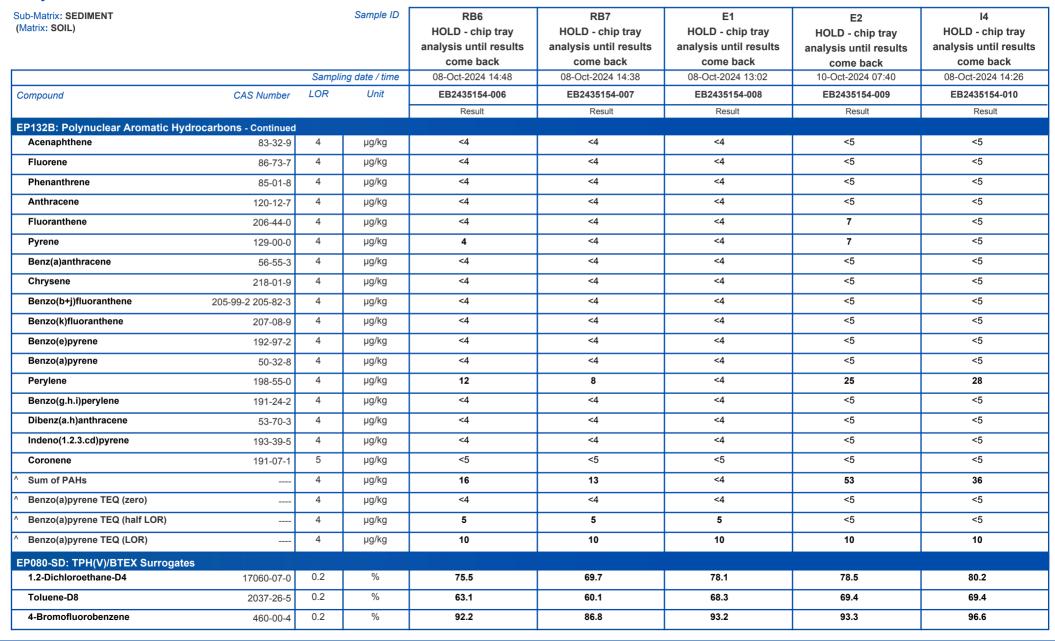




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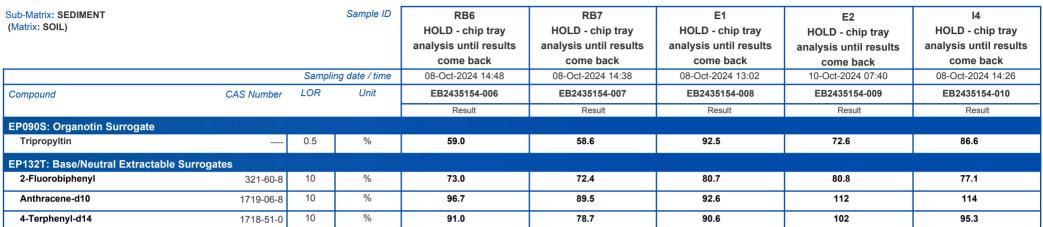




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP





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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

Analytical Results

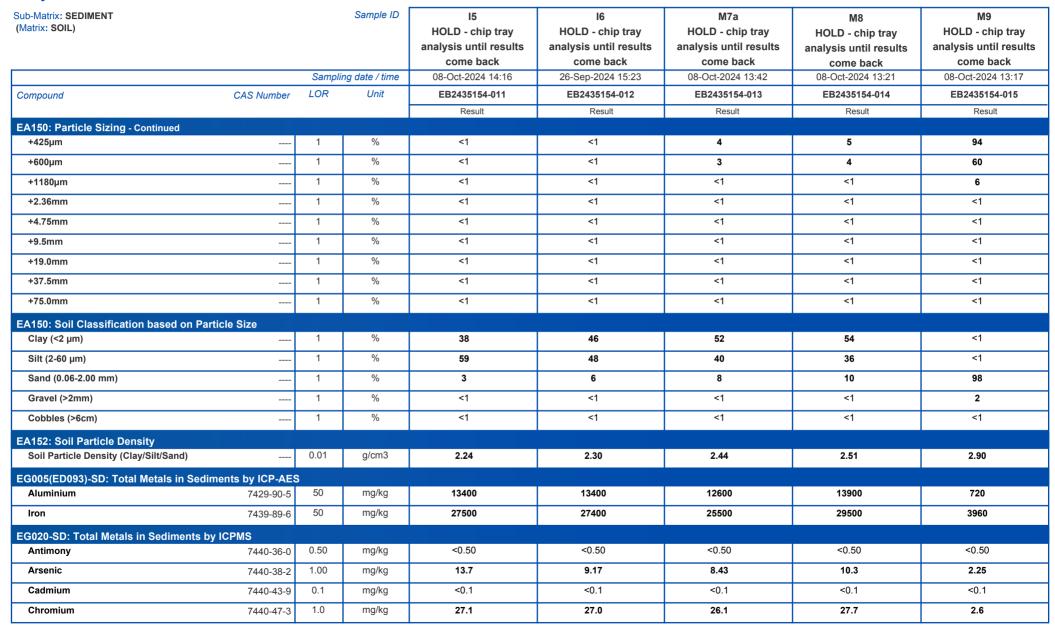
Sample ID Sub-Matrix: SEDIMENT 15 16 M7a М9 **M8** (Matrix: SOIL) HOLD - chip tray **HOLD** - chip tray HOLD - chip tray HOLD - chip tray HOLD - chip trav analysis until results come back come back come back come back come back Sampling date / time 08-Oct-2024 14:16 26-Sep-2024 15:23 08-Oct-2024 13:42 08-Oct-2024 13:21 08-Oct-2024 13:17 LOR Unit EB2435154-011 EB2435154-012 EB2435154-013 EB2435154-014 EB2435154-015 Compound CAS Number Result Result Result Result Result EA033-A: Actual Acidity pH KCI (23A) pH Unit 8.6 9.5 0.1 8.4 8.4 8.5 Titratable Actual Acidity (23F) 2 mole H+/t <2 <2 <2 <2 <2 sulfidic - Titratable Actual Acidity (s-23F) 0.02 % pyrite S < 0.02 <0.02 <0.02 <0.02 <0.02 EA033-B: Potential Acidity 0.005 Chromium Reducible Sulfur (22B) % S 0.225 0.255 0.234 0.292 0.024 10 mole H+/t 182 15 140 159 146 acidity - Chromium Reducible Sulfur (a-22B) EA033-C: Acid Neutralising Capacity Acid Neutralising Capacity (19A2) 0.01 % CaCO3 5.32 3.01 2.78 3.59 0.62 10 acidity - Acid Neutralising Capacity mole H+/t 1060 602 554 717 124 ---(a-19A2) sulfidic - Acid Neutralising Capacity 0.01 % pyrite S 1.70 0.96 0.89 1.15 0.20 (s-19A2) EA033-E: Acid Base Accounting ANC Fineness Factor 1.5 0.5 1.5 1.5 1.5 1.5 Net Acidity (sulfur units) 0.02 % S < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 ---Net Acidity (acidity units) 10 mole H+/t <10 <10 <10 <10 <10 ---Liming Rate kg CaCO3/t <1 <1 <1 <1 <1 1 Net Acidity excluding ANC (sulfur units) 0.02 % S 0.22 0.25 0.23 0.29 0.02 Net Acidity excluding ANC (acidity units) 10 mole H+/t 140 159 146 182 15 Liming Rate excluding ANC kg CaCO3/t 10 12 11 14 1 EA055: Moisture Content (Dried @ 105-110°C) **Moisture Content** 1.0 68.3 63.8 61.9 64.2 21.9 EA150: Particle Sizing +75µm 1 5 7 10 100 +150µm % <1 1 5 7 100 +300µm % <1 <1 6 99 5



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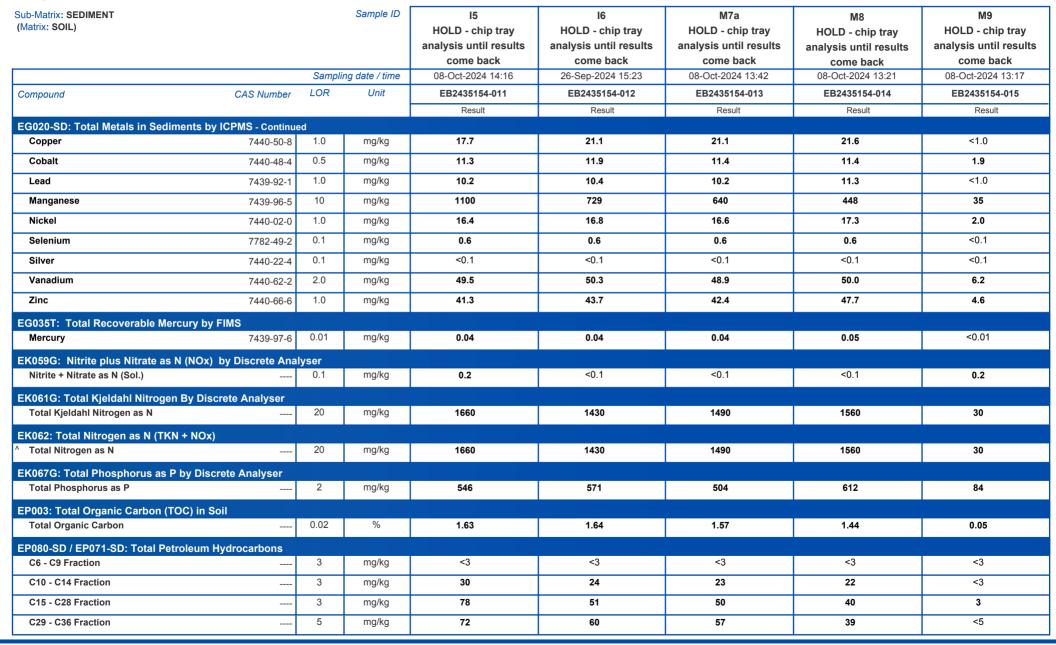




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project 003344 PoB (Bundaberg) 2024 SAP

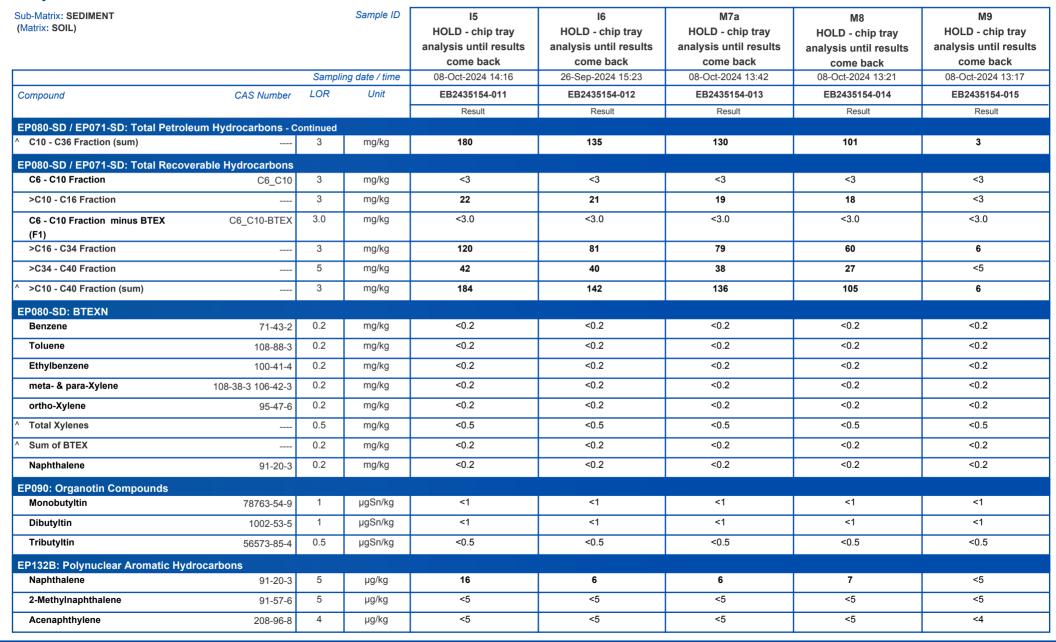




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

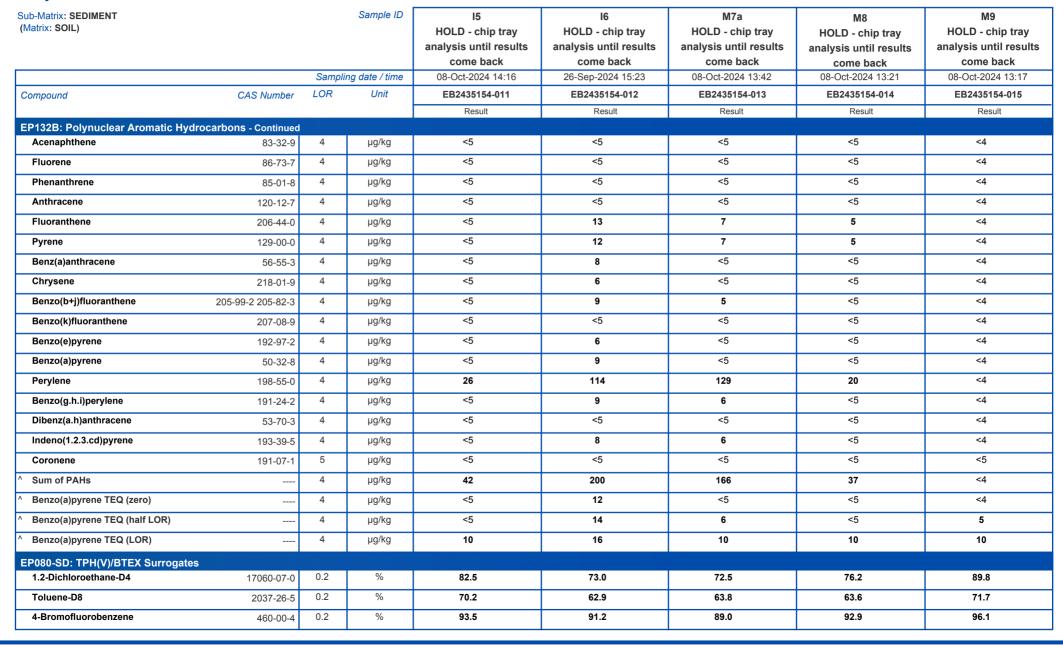




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

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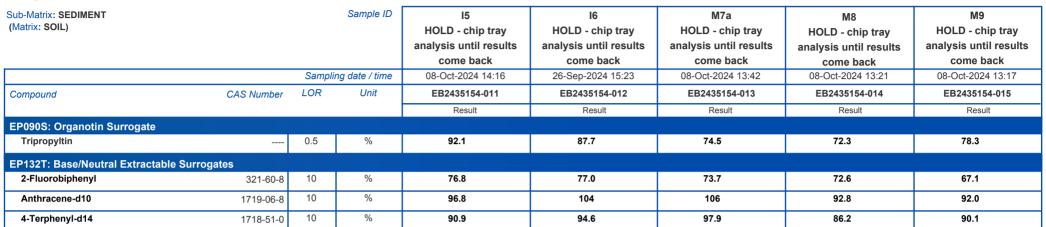




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Project : 003344 PoB (Bundaberg) 2024 SAP

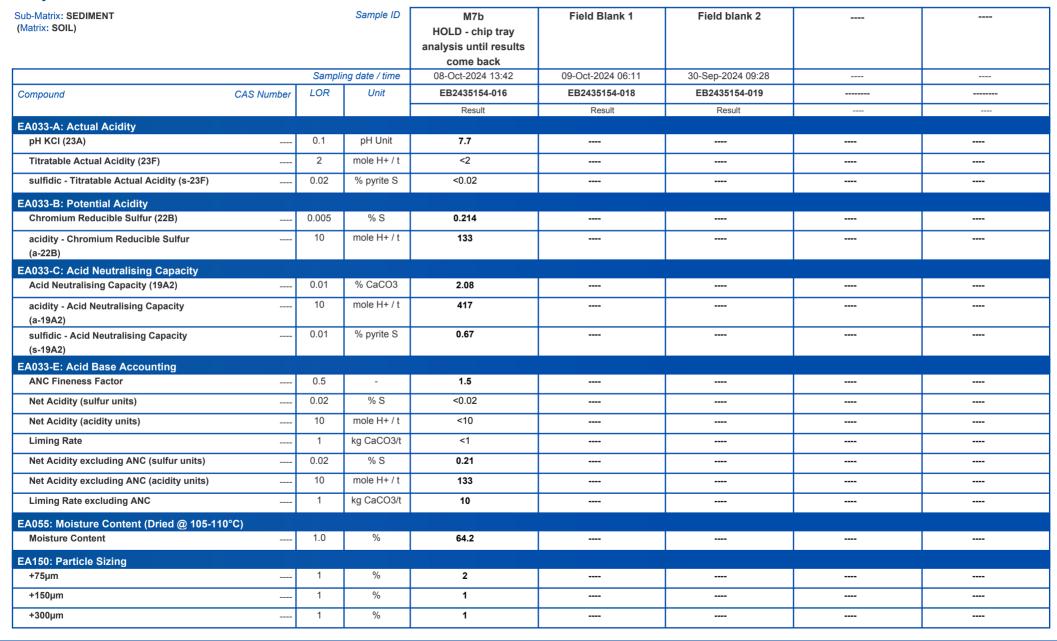




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

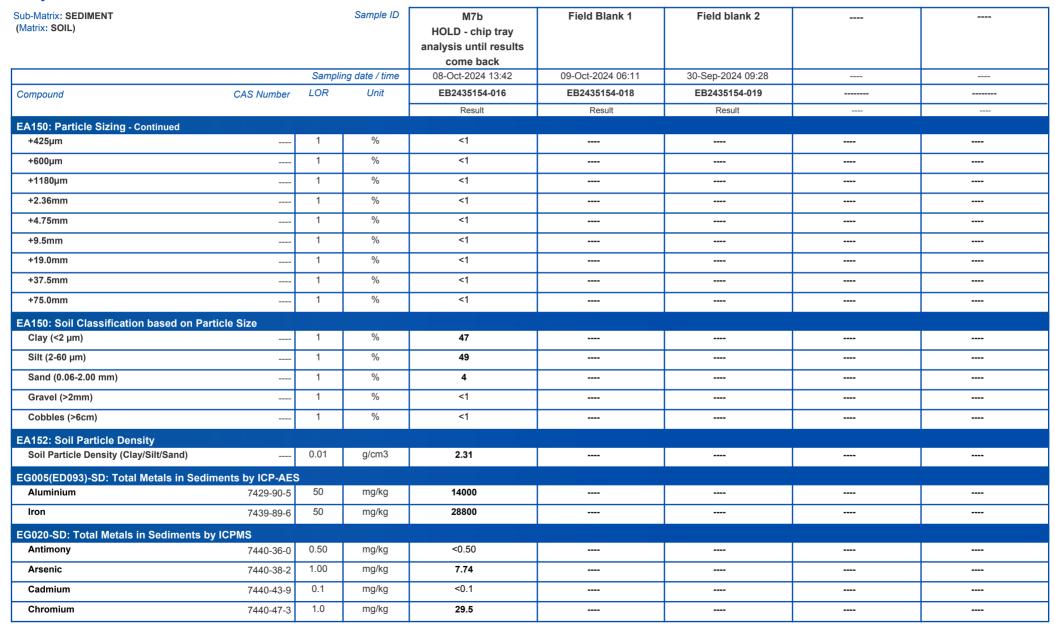




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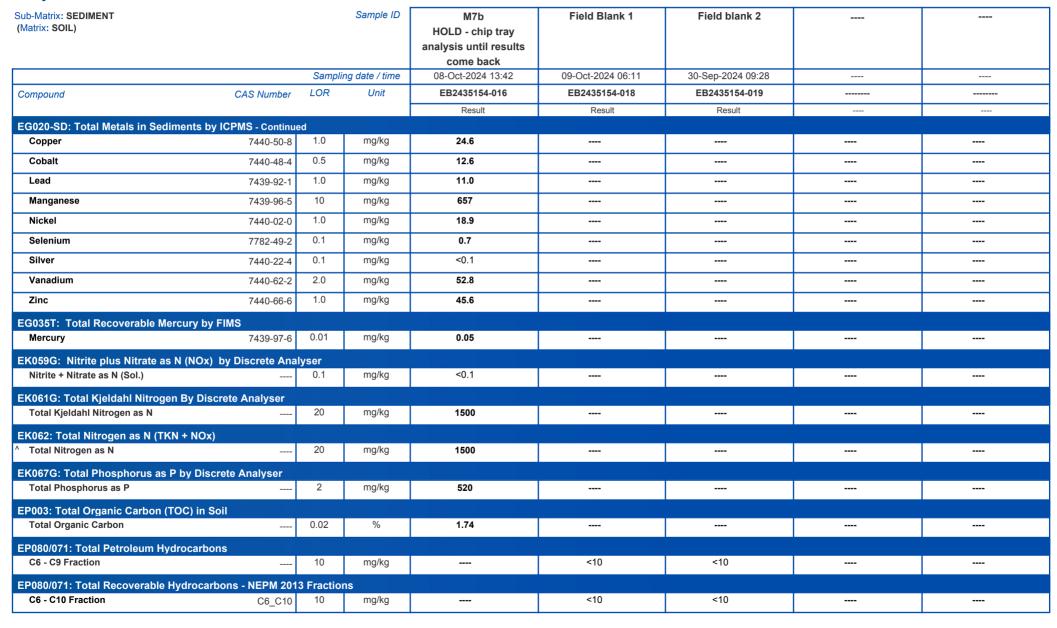




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

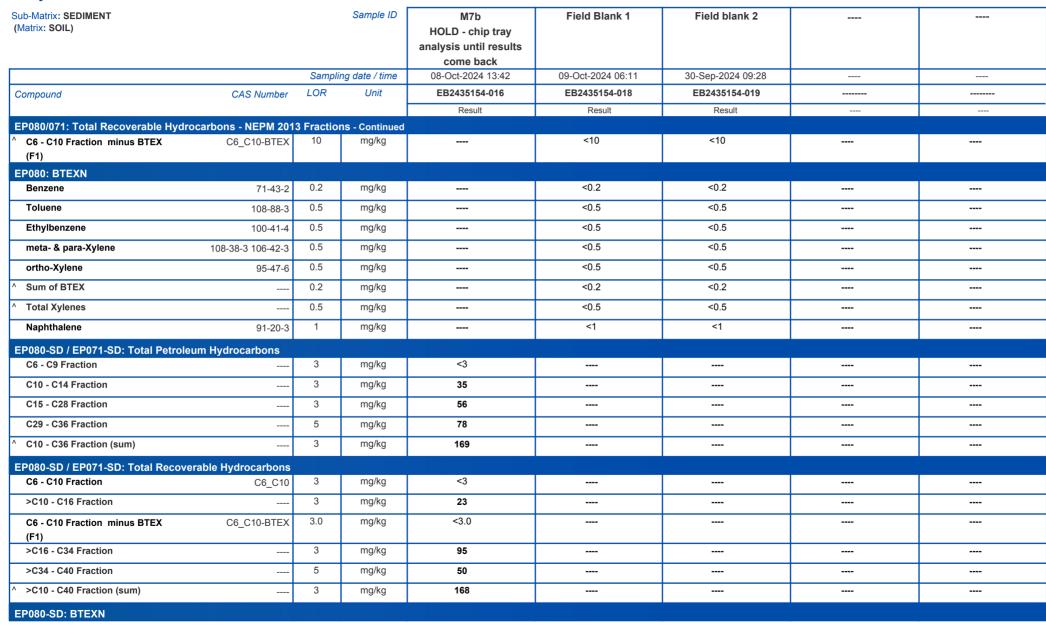




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

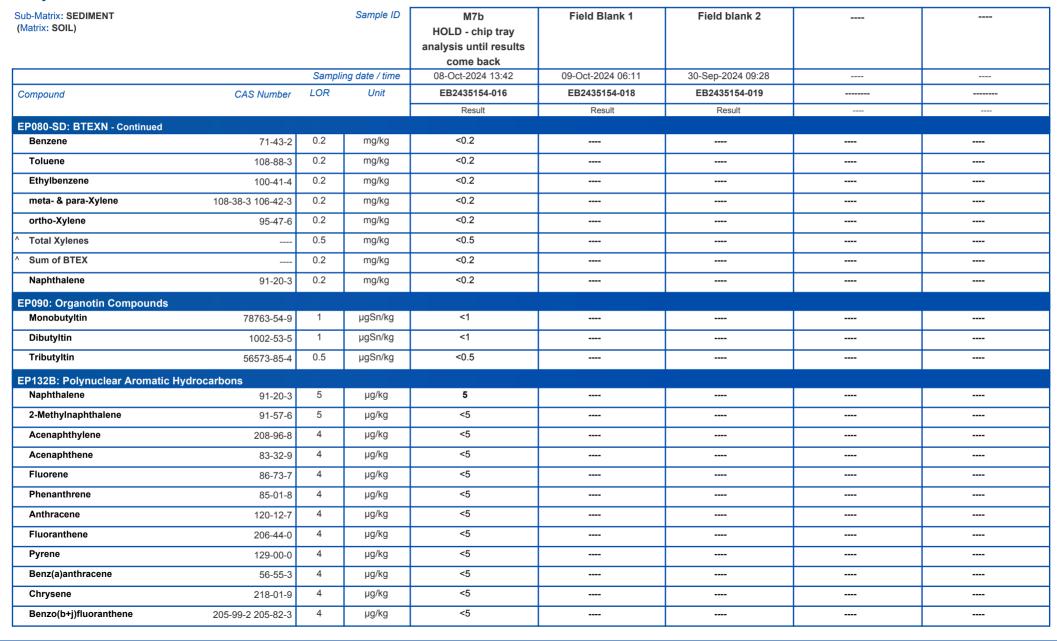
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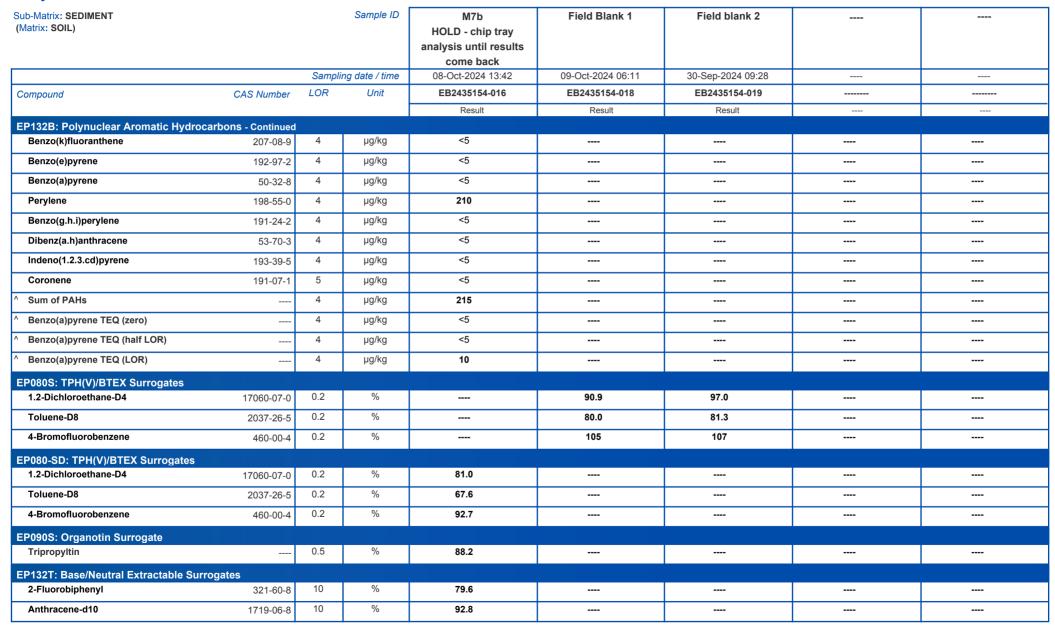




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Project : 003344 PoB (Bundaberg) 2024 SAP

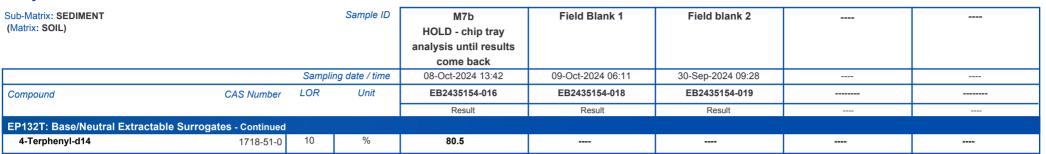




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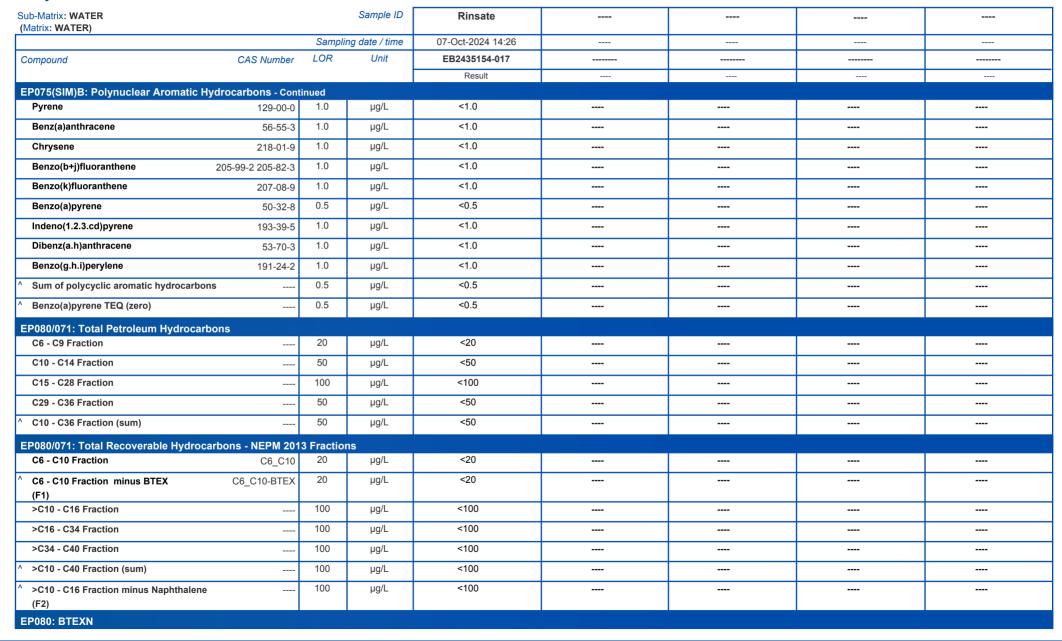




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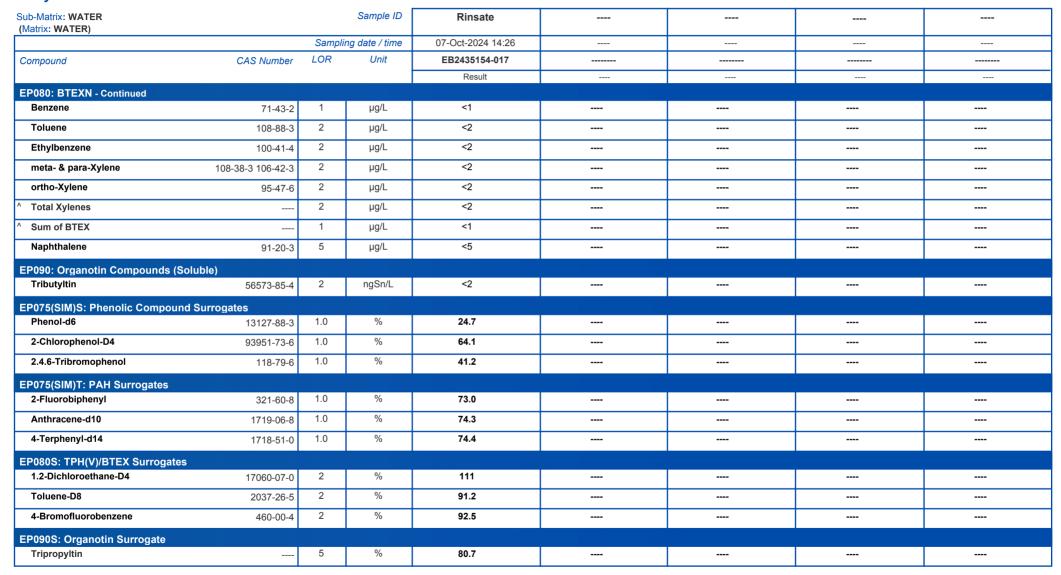




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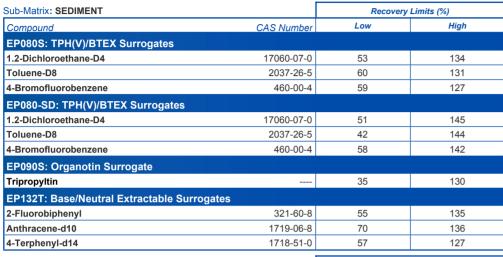


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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

Surrogate Control Limits



Sub-Matrix: WATER		Recovery	Limits (%)
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	72
2-Chlorophenol-D4	93951-73-6	27	130
2.4.6-Tribromophenol	118-79-6	19	181
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	14	146
Anthracene-d10	1719-06-8	35	137
4-Terphenyl-d14	1718-51-0	36	154
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	66	138
Toluene-D8	2037-26-5	79	120
4-Bromofluorobenzene	460-00-4	74	118
EP090S: Organotin Surrogate			
Tripropyltin		24	116

Inter-Laboratory Testing

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

(SOIL) EP132B: Polynuclear Aromatic Hydrocarbons (SOIL) EP132T: Base/Neutral Extractable Surrogates





QUALITY CONTROL REPORT

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Work Order : EB2435154 Page

Client : BMT COMMERCIAL AUSTRALIA PTY LTD Laboratory : Environmental Division Brisbane

Contact : Freddie Pastorelli Contact : Nathan King

Address : PO BOX 203 SPRING HILL Address : 2 Byth Street Stafford QLD Australia 4053

BRISBANE QLD 4004

Telephone : 07 3831 6744 Telephone : +61-7-3552-8685

Project : 003344 PoB (Bundaberg) 2024 SAP Date Samples Received : 11-Oct-2024

Order number : - Date Analysis Commenced : 15-Oct-2024
C-O-C number : 73252 Issue Date : 24-Oct-2024

Sampler ; ANGUS WILLIAMS, FELIX REYNOLDS

Site : Port of Bundaberg

Quote number : EB24BMTWBM0013

No. of samples received : 19
No. of samples analysed : 19

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
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Soil Preparation, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
Tatijana Markoska	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Vincent Muller	Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Vincent Muller	Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



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						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD: 1	Total Metals in Sediments by	ICP-AES (QC Lot: 6119016)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EG005-SD: Aluminium	7429-90-5	50	mg/kg	840	920	9.7	0% - 50%
		EG005-SD: Iron	7439-89-6	50	mg/kg	3840	4170	8.2	0% - 20%
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EG005-SD: Aluminium	7429-90-5	50	mg/kg	13400	13100	2.3	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	27500	26700	3.0	0% - 20%
EG035T: Total Reco	overable Mercury by FIMS (Lo	ow Level) (QC Lot: 6119018)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	0.04	0.04	0.0	No Limit
EA033-A: Actual Ac	idity (QC Lot: 6133702)								
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EA033: sulfidic - Titratable Actual Acidity (s-23F)		0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)		2	mole H+ / t	<2	<2	0.0	No Limit
		EA033: pH KCI (23A)		0.1	pH Unit	8.2	8.4	2.5	0% - 20%

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Sub-Matrix: SOIL						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA033-A: Actual Ac	idity (QC Lot: 6133702) - co	ntinued							
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EA033: sulfidic - Titratable Actual Acidity (s-23F)		0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)		2	mole H+ / t	<2	<2	0.0	No Limit
		EA033: pH KCI (23A)		0.1	pH Unit	8.6	8.6	0.0	0% - 20%
EA033-B: Potential	Acidity (QC Lot: 6133702)								
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EA033: Chromium Reducible Sulfur (22B)		0.005	% S	0.015	0.016	0.0	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)		10	mole H+ / t	<10	<10	0.0	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EA033: Chromium Reducible Sulfur (22B)		0.005	% S	0.225	0.233	3.2	0% - 20%
		EA033: acidity - Chromium Reducible Sulfur (a-22B)		10	mole H+ / t	140	145	3.2	0% - 50%
EA033-C: Acid Neut	ralising Capacity (QC Lot: 6	133702)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EA033: Acid Neutralising Capacity (19A2)		0.01	% CaCO3	0.24	0.21	13.6	0% - 20%
		EA033: sulfidic - Acid Neutralising Capacity (s-19A2)		0.01	% pyrite S	0.08	0.07	0.0	No Limit
		EA033: acidity - Acid Neutralising Capacity (a-19A2)		10	mole H+ / t	47	41	13.6	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EA033: Acid Neutralising Capacity (19A2)		0.01	% CaCO3	5.32	4.81	10.1	0% - 20%
		EA033: sulfidic - Acid Neutralising Capacity (s-19A2)		0.01	% pyrite S	1.70	1.54	10.1	0% - 20%
		EA033: acidity - Acid Neutralising Capacity (a-19A2)		10	mole H+ / t	1060	961	10.1	0% - 20%
EA055: Moisture Co	ntent (Dried @ 105-110°C) (QC Lot: 6119040)							
EB2435093-005	Anonymous	EA055: Moisture Content		0.1 (1.0)*	%	56.9	56.9	0.0	0% - 20%
EB2435154-008	E1 HOLD - chip tray analysis until results come back	EA055: Moisture Content		0.1 (1.0)*	%	16.1	15.2	5.6	0% - 50%
EG020-SD: Total Me	tals in Sediments by ICPMS	(QC Lot: 6119017)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

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Work Order : EB2435154

Client : BMT COMMERCIAL AUSTRALIA PTY LTD



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 Me	tals in Sediments by ICPMS	(QC Lot: 6119017) - continued							
EB2435154-001	RB1 HOLD - chip tray analysis until results come	EG020-SD: Selenium	7782-49-2	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
	back		7440-22-4	0.1		<0.1	<0.1	0.0	No Limit
		EG020-SD: Silver			mg/kg	_			
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Cobalt	7440-48-4	0.5	mg/kg	1.7	2.0	17.0	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	1.08	7.6	No Limit
		EG020-SD: Chromium	7440-47-3	1	mg/kg	2.3	3.6	42.2	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	1.4	36.6	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	<1.0	0.0	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	2.0	2.8	30.6	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	4.0	5.4	29.8	No Limit
		EG020-SD: Manganese	7439-96-5	10	mg/kg	66	78	17.5	No Limit
		EG020-SD: Vanadium	7440-62-2	2	mg/kg	6.4	7.4	15.6	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Selenium	7782-49-2	0.1	mg/kg	0.6	0.6	0.0	No Limit
		EG020-SD: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Cobalt	7440-48-4	0.5	mg/kg	11.3	11.5	1.7	0% - 20%
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	13.7	14.0	2.1	0% - 50%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	27.1	27.5	1.6	0% - 20%
		EG020-SD: Copper	7440-50-8	1	mg/kg	17.7	17.8	0.0	0% - 50%
		EG020-SD: Lead	7439-92-1	1	mg/kg	10.2	10.4	1.6	0% - 50%
		EG020-SD: Nickel	7440-02-0	1	mg/kg	16.4	16.7	1.4	0% - 50%
		EG020-SD: Zinc	7440-66-6	1	mg/kg	41.3	41.9	1.3	0% - 20%
		EG020-SD: Manganese	7439-96-5	10	mg/kg	1100	1120	1.8	0% - 20%
		EG020-SD: Vanadium	7440-62-2	2	mg/kg	49.5	50.1	1.1	0% - 20%
K059G: Nitrite plu	s Nitrate as N (NOx) by Disc	crete Analyser (QC Lot: 6119652)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EK059G: Nitrite + Nitrate as N (Sol.)		0.1	mg/kg	0.3	0.3	0.0	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EK059G: Nitrite + Nitrate as N (Sol.)		0.1	mg/kg	0.2	0.2	0.0	No Limit

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Sub-Matrix: SOIL						Laboratory E	Ouplicate (DUP) Report		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK061G: Total Kjeld	ahl Nitrogen By Discrete Ana	alyser (QC Lot: 6119029) - continued							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		20	mg/kg	40	30	30.6	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		20	mg/kg	1660	1900	13.5	0% - 20%
EK067G: Total Phos	phorus as P by Discrete Ana	lyser (QC Lot: 6119028)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		2	mg/kg	154	129	17.2	0% - 20%
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		2	mg/kg	546	618	12.5	0% - 20%
EP003: Total Organi	c Carbon (TOC) in Soil (QC	Lot: 6133751)							
EB2434372-001	Anonymous	EP003: Total Organic Carbon		0.02	%	0.40	0.34	15.3	0% - 50%
EB2435093-004	Anonymous	EP003: Total Organic Carbon		0.02	%	1.56	1.58	1.5	0% - 20%
EP003: Total Organi	Carbon (TOC) in Soil (QC	Lot: 6133752)							
EB2435154-007	RB7 HOLD - chip tray analysis until results come back	EP003: Total Organic Carbon		0.02	%	0.54	0.54	0.0	0% - 20%
EP080-SD / EP071-S	D: Total Petroleum Hydrocai	bons (QC Lot: 6119061)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C9 Fraction		3	mg/kg	<3	<3	0.0	No Limit
EB2435154-010	I4 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C9 Fraction		3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-S	D: Total Petroleum Hydrocai	bons (QC Lot: 6119109)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP071-SD-SV: C10 - C14 Fraction		3 (4)*	mg/kg	11	8	31.5	No Limit
		EP071-SD-SV: C15 - C28 Fraction		3	mg/kg	<3	<3	0.0	No Limit
		EP071-SD-SV: C10 - C36 Fraction (sum)		3 (7)*	mg/kg	11	8	31.6	No Limit
		EP071-SD-SV: C29 - C36 Fraction		5	mg/kg	<5	<5	0.0	No Limit
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EP071-SD-SV: C10 - C14 Fraction		3 (7)*	mg/kg	30	29	0.0	No Limit
		EP071-SD-SV: C15 - C28 Fraction		3 (14)*	mg/kg	78	65	18.0	No Limit
		EP071-SD-SV: C10 - C36 Fraction (sum)		3 (14)*	mg/kg	180	161	11.1	0% - 50%
		EP071-SD-SV: C29 - C36 Fraction		5 (14)*	mg/kg	72	67	7.5	No Limit

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



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-S	D: Total Recoverable Hydro	carbons (QC Lot: 6119061)										
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	No Limit			
EB2435154-010	l4 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	No Limit			
EP080-SD / EP071-S	D: Total Recoverable Hydro	carbons (QC Lot: 6119109)										
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP071-SD-SV: >C10 - C16 Fraction		3	mg/kg	3	<3	0.0	No Limit			
		EP071-SD-SV: >C16 - C34 Fraction		3	mg/kg	4	<3	0.0	No Limit			
		EP071-SD-SV: >C10 - C40 Fraction (sum)		3	mg/kg	7	<3	80.0	No Limit			
		EP071-SD-SV: >C34 - C40 Fraction		5	mg/kg	<5	<5	0.0	No Limit			
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EP071-SD-SV: >C10 - C16 Fraction		3 (14)*	mg/kg	22	19	18.1	No Limit			
		EP071-SD-SV: >C16 - C34 Fraction		3 (14)*	mg/kg	120	104	14.0	No Limit			
		EP071-SD-SV: >C10 - C40 Fraction (sum)		3 (14)*	mg/kg	184	162	12.7	0% - 50%			
		EP071-SD-SV: >C34 - C40 Fraction		5 (14)*	mg/kg	42	39	7.3	No Limit			
EP080-SD: BTEXN ((QC Lot: 6119061)											
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: Total Xylenes		0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	No Limit			
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
EB2435154-010	I4 HOLD - chip tray analysis until results come back	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit			
		EP080-SD: Total Xylenes		0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	No Limit			

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Sub-Matrix: SOIL					t .				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080-SD: BTEXN	(QC Lot: 6119061) - continue	ed							
EB2435154-010	l4 HOLD - chip tray analysis until results come back	EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP090: Organotin C	ompounds (QC Lot: 611911	0)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP090: Tributyltin	56573-85-4	0.5	μgSn/kg	<0.5	<0.5	0.0	No Limit
I		EP090: MonobutyItin	78763-54-9	1	μgSn/kg	<1	<1	0.0	No Limit
		EP090: Dibutyltin	1002-53-5	1	μgSn/kg	<1	<1	0.0	No Limit
EB2435154-011	54-011 I5 HOLD - chip tray analysis until results come back	EP090: Tributyltin	56573-85-4	0.5	μgSn/kg	<0.5	<0.5	0.0	No Limit
		EP090: MonobutyItin	78763-54-9	1	μgSn/kg	<1	<1	0.0	No Limit
		EP090: Dibutyltin	1002-53-5	1	μgSn/kg	<1	<1	0.0	No Limit
EP132B: Polynuclea	ar Aromatic Hydrocarbons (G	QC Lot: 6120567)							
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP132B-SD: Acenaphthylene	208-96-8	4	μg/kg	<4	<4	0.0	No Limit
I		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
I		EP132B-SD: Phenanthrene	85-01-8	4	μg/kg	<4	<4	0.0	No Limit
I		EP132B-SD: Anthracene	120-12-7	4	μg/kg	<4	<4	0.0	No Limit
I		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	205-99-2 205-82-3	4	µg/kg	<4	<4	0.0	No Limit
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	4	μg/kg	<4	<4	0.0	No Limit
I		EP132B-SD: Benzo(e)pyrene	192-97-2	4	μg/kg	<4	<4	0.0	No Limit
I		EP132B-SD: Benzo(a)pyrene	50-32-8	4	μg/kg	<4	<4	0.0	No Limit
I		EP132B-SD: Perylene	198-55-0	4	μg/kg	<4	<4	0.0	No Limit
I		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
ı		EP132B-SD: Coronene	191-07-1	5	μg/kg	<5	<5	0.0	No Limit

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



Sub-Matrix: SOIL						Laboratory I	Duplicate (DUP) Report	t	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP132B: Polynuclea	r Aromatic Hydrocarbons (0	QC Lot: 6120567) - continued							
EB2435154-011	I5 HOLD - chip tray analysis until results come back	EP132B-SD: Acenaphthylene	208-96-8	4 (5)*	µg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Acenaphthene	83-32-9	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Fluorene	86-73-7	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Phenanthrene	85-01-8	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Anthracene	120-12-7	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Fluoranthene	206-44-0	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Pyrene	129-00-0	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Benz(a)anthracene	56-55-3	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Chrysene	218-01-9	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2 205-82-3	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Benzo(e)pyrene	192-97-2	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Benzo(a)pyrene	50-32-8	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Perylene	198-55-0	4 (5)*	μg/kg	26	23	11.2	No Limit
		EP132B-SD: Benzo(g.h.i)perylene	191-24-2	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Dibenz(a.h)anthracene	53-70-3	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Indeno(1.2.3.cd)pyrene	193-39-5	4 (5)*	μg/kg	<5	<5	0.0	No Limit
		EP132B-SD: Sum of PAHs		4 (5)*	μg/kg	42	37	12.7	No Limit
		EP132B-SD: Naphthalene	91-20-3	5	μg/kg	16	14	14.6	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
Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report	t	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals	by ICP-MS (QC Lot: 61228	865)							
EB2435184-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.009	0.008	0.0	No Limit
EB2435326-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001 (0.0005)*	mg/L	<0.0005	<0.0005	0.0	No Limit

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



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 (%)
EG020T: Total Meta	ls by ICP-MS (QC Lot	: 6122865) - continued							
EB2435326-006	Anonymous	EG020A-T: Antimony	7440-36-0	0.001 (0.005)	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001 (0.005)	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001 (0.005)	mg/L	0.007	<0.005	23.1	No Limit
		EG020A-T: Copper	7440-50-8	0.001 (0.005)	mg/L	0.006	<0.005	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001 (0.005)	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001 (0.005)	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005 (0.026)	mg/L	<0.026	<0.026	0.0	No Limit
EG020T: Total Meta	ls by ICP-MS (QC Lot	: 6122869)							
EB2435184-006	Anonymous	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EB2435326-006	Anonymous	EG020B-T: Silver	7440-22-4	0.001 (0.005)	mg/L	<0.005	<0.005	0.0	No Limit
EG035T: Total Rec	overable Mercury by F	FIMS (QC Lot: 6122883)							
EB2435165-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EB2435184-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK059G: Nitrite plu	ıs Nitrate as N (NOx) I	by Discrete Analyser (QC Lot: 6138301)							
EB2435960-002	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	0.01	0.01	0.0	No Limit
EK061G: Total Kjeld	dahl Nitrogen By Disci	rete Analyser (QC Lot: 6137851)							
EB2434395-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1 (0.2)*	mg/L	168	169	0.8	0% - 20%
EB2436368-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1 (0.2)*	mg/L	383	389	1.6	0% - 20%
EK067G: Total Phos	sphorus as P by Discr	ete Analyser (QC Lot: 6137852)							
EB2434395-001	Anonymous	EK067G: Total Phosphorus as P		0.01 (0.02)*	mg/L	47.1	47.1	0.0	0% - 20%
EB2436368-001	Anonymous	EK067G: Total Phosphorus as P		0.01 (0.02)*	mg/L	8.18	8.01	2.1	0% - 20%
EP080/071: Total Pe	etroleum Hydrocarbon	s (QC Lot: 6133985)							
EB2435154-017	Rinsate	EP080: C6 - C9 Fraction		20	μg/L	<20	<20	0.0	No Limit
EB2435392-010	Anonymous	EP080: C6 - C9 Fraction		20	μg/L	<20	<20	0.0	No Limit
EP080/071: Total Re	ecoverable Hydrocarb	ons - NEPM 2013 Fractions (QC Lot: 6133985)							
EB2435154-017	Rinsate	EP080: C6 - C10 Fraction	C6_C10	20	μg/L	<20	<20	0.0	No Limit
EB2435392-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	μg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC	Lot: 6133985)								
EB2435154-017	Rinsate	EP080: Benzene	71-43-2	1	μg/L	<1	<1	0.0	No Limit
I		EP080: Toluene	108-88-3	2	μg/L	<2	<2	0.0	No Limit

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



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 (%)	
EP080: BTEXN (QC	Lot: 6133985) - con	tinued								
EB2435154-017	Rinsate	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	
EB2435392-010	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	

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



Method Blank (MB) and Laboratory Control Sample (LCS) Report

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				Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
				Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (Q0	CLot: 61190	16)						
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	12544 mg/kg	99.1	70.0	130
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	30320 mg/kg	93.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (Low Level) (Q	CLot: 61190	18)						
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	124	70.0	130
EA033-A: Actual Acidity (QCLot: 6133702)								
EA033: pH KCl (23A)			pH Unit		4.7 pH Unit	101	80.0	120
EA033: Titratable Actual Acidity (23F)		2	mole H+ / t	<2	23.5 mole H+ / t	111	80.0	120
EA033: sulfidic - Titratable Actual Acidity (s-23F)		0.02	% pyrite S	<0.02				
EA033-B: Potential Acidity (QCLot: 6133702)								
EA033: Chromium Reducible Sulfur (22B)		0.005	% S	<0.005	0.283 % S	92.4	77.0	121
EA033: acidity - Chromium Reducible Sulfur (a-22B)		10	mole H+ / t	<10				
EA033-C: Acid Neutralising Capacity (QCLot: 6133702)								
EA033: Acid Neutralising Capacity (19A2)		0.01	% CaCO3	<0.01	10 % CaCO3	101	91.0	112
EA033: acidity - Acid Neutralising Capacity (a-19A2)		10	mole H+ / t	<10				
EA033: sulfidic - Acid Neutralising Capacity (s-19A2)		0.01	% pyrite S	<0.01				
EA152: Soil Particle Density (QCLot: 6118998)								
EA152: Soil Particle Density (Clay/Silt/Sand)			g/cm3		2.68 g/cm3	98.9	80.0	120
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6119	017)							
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50				
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	60.1 mg/kg	102	80.0	124
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.54 mg/kg	94.7	87.0	122
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	16 mg/kg	91.8	79.0	129
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	38 mg/kg	98.0	85.0	118
EG020-SD: Cobalt	7440-48-4	0.5	mg/kg	<0.5	9.61 mg/kg	96.0	70.0	130
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	53.3 mg/kg	91.2	86.0	119
EG020-SD: Manganese	7439-96-5	10	mg/kg	<10	493 mg/kg	90.8	70.0	130
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	13 mg/kg	95.8	77.0	123
EG020-SD: Selenium	7782-49-2	0.1	mg/kg	<0.1				
EG020-SD: Silver	7440-22-4	0.1	mg/kg	<0.1	2.54 mg/kg	92.7	70.0	130
EG020-SD: Vanadium	7440-62-2	2	mg/kg	<2.0	42.6 mg/kg	99.8	70.0	130

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Sub-Matrix: SOIL			Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6119017) - cor	ntinued						
EG020-SD: Zinc 7440-66-6	1	mg/kg	<1.0	192 mg/kg	86.9	71.0	127
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6	119652)						
EK059G: Nitrite + Nitrate as N (Sol.)	0.1	mg/kg	<0.1	2.5 mg/kg	94.6	83.2	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6119029)							
EK061G: Total Kjeldahl Nitrogen as N	20	mg/kg	<20	306 mg/kg	96.1	70.0	130
			<20	2300 mg/kg	108	88.0	112
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6119028)							
EK067G: Total Phosphorus as P	2	mg/kg	<2	142 mg/kg	96.8	70.0	130
			<2	567 mg/kg	100	88.0	112
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 6133751)							
EP003: Total Organic Carbon	0.02	%	<0.02	0.55 %	99.6	80.0	120
			<0.02	32.3 %	98.1	80.0	120
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 6133752)							
EP003: Total Organic Carbon	0.02	%	<0.02	0.55 %	95.9	80.0	120
			<0.02	32.3 %	96.7	80.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6119060)							
EP080: C6 - C9 Fraction	10	mg/kg	<10	18 mg/kg	92.6	64.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC	CLot: 6119060)						
EP080: C6 - C10 Fraction C6_C10	10	mg/kg	<10	22.5 mg/kg	89.0	58.1	124
EP080: BTEXN (QCLot: 6119060)			1				
EP080: Benzene 71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.8	68.0	107
EP080: Toluene 108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.3	69.0	108
EP080: Ethylbenzene 100-41-4	0.5	mg/kg	<0.5	1 mg/kg	86.0	68.0	109
EP080: meta- & para-Xylene 108-38-3	0.5	mg/kg	<0.5	2 mg/kg	93.2	70.0	114
106-42-3							
EP080: ortho-Xylene 95-47-6	0.5	mg/kg	<0.5	1 mg/kg	94.0	74.0	116
EP080: Naphthalene 91-20-3	1	mg/kg	<1	1 mg/kg	84.3	74.0	109
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6119061)							
EP080-SD: C6 - C9 Fraction	3	mg/kg	<3	18 mg/kg	94.7	66.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6119109)							
EP071-SD-SV: C10 - C14 Fraction	3	mg/kg	<4	189 mg/kg	91.9	43.0	126
EP071-SD-SV: C15 - C28 Fraction	3	mg/kg	<8	203 mg/kg	98.0	66.0	140
EP071-SD-SV: C29 - C36 Fraction	5	mg/kg	<8				
EP071-SD-SV: C10 - C36 Fraction (sum)	3	mg/kg	<8				

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Sub-Matrix: SOIL			Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 611906	1)						
EP080-SD: C6 - C10 Fraction C6_C10	3	mg/kg	<3	22.5 mg/kg	90.8	66.0	119
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 611910	9)						
EP071-SD-SV: >C10 - C16 Fraction	3	mg/kg	<8	251 mg/kg	92.9	40.0	134
EP071-SD-SV: >C16 - C34 Fraction	3	mg/kg	<8	133 mg/kg	100	66.0	136
EP071-SD-SV: >C34 - C40 Fraction	5	mg/kg	<8				
EP071-SD-SV: >C10 - C40 Fraction (sum)	3	mg/kg	<8				
EP080-SD: BTEXN (QCLot: 6119061)							
EP080-SD: Benzene 71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.2	73.0	105
EP080-SD: Toluene 108-88-3	0.2	mg/kg	<0.2	1 mg/kg	85.9	73.0	105
EP080-SD: Ethylbenzene 100-41-4	0.2	mg/kg	<0.2	1 mg/kg	85.7	67.0	104
EP080-SD: meta- & para-Xylene 108-38-3 106-42-3	0.2	mg/kg	<0.2	2 mg/kg	94.3	66.0	106
EP080-SD: ortho-Xylene 95-47-6	0.2	mg/kg	<0.2	1 mg/kg	94.9	68.0	105
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	1 mg/kg	85.8	72.0	115
EP090: Organotin Compounds (QCLot: 6119110)							
EP090: Monobutyltin 78763-54-9	1	μgSn/kg	<1	1.25 μgSn/kg	81.4	36.0	128
EP090: Dibutyltin 1002-53-5	1	μgSn/kg	<1	1.25 μgSn/kg	74.8	42.0	132
EP090: Tributyltin 56573-85-4	0.5	μgSn/kg	<0.5	1.25 μgSn/kg	74.8	52.0	139
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6120567)							
EP132B-SD: Naphthalene 91-20-3	5	μg/kg	<5	25 μg/kg	108	63.0	129
EP132B-SD: 2-Methylnaphthalene 91-57-6	5	μg/kg	<5	25 μg/kg	99.8	64.0	128
EP132B-SD: Acenaphthylene 208-96-8	4	μg/kg	<4	25 μg/kg	98.6	65.0	129
EP132B-SD: Acenaphthene 83-32-9	4	μg/kg	<4	25 μg/kg	104	68.0	132
EP132B-SD: Fluorene 86-73-7	4	μg/kg	<4	25 μg/kg	115	68.0	124
EP132B-SD: Phenanthrene 85-01-8	4	μg/kg	<4	25 μg/kg	109	64.0	134
EP132B-SD: Anthracene 120-12-7	4	μg/kg	<4	25 μg/kg	84.9	65.0	131
EP132B-SD: Fluoranthene 206-44-0	4	μg/kg	<4	25 μg/kg	104	64.0	130
EP132B-SD: Pyrene 129-00-0	4	μg/kg	<4	25 μg/kg	101	67.0	133
EP132B-SD: Benz(a)anthracene 56-55-3	4	μg/kg	<4	25 μg/kg	109	62.0	130
EP132B-SD: Chrysene 218-01-9	4	μg/kg	<4	25 μg/kg	104	65.0	133
EP132B-SD: Benzo(b+j)fluoranthene 205-99-2 205-82-3	4	μg/kg	<4	25 μg/kg	93.0	68.0	120
EP132B-SD: Benzo(k)fluoranthene 207-08-9	4	μg/kg	<4	25 μg/kg	108	61.0	133

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Sub-Matrix: SOIL			Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6120567) - contin							
EP132B-SD: Benzo(e)pyrene 192-97-2	4	μg/kg	<4	25 μg/kg	95.6	63.0	127
EP132B-SD: Benzo(a)pyrene 50-32-8	4	μg/kg	<4	25 μg/kg	95.8	66.0	118
EP132B-SD: Perylene 198-55-0	4	μg/kg	<4	25 μg/kg	97.8	69.0	119
EP132B-SD: Benzo(g.h.i)perylene	4	μg/kg	<4	25 μg/kg	119	66.0	120
EP132B-SD: Dibenz(a.h)anthracene 53-70-3	4	μg/kg	<4	25 μg/kg	120	64.0	122
EP132B-SD: Indeno(1.2.3.cd)pyrene 193-39-5	4	μg/kg	<4	25 μg/kg	116	64.0	120
EP132B-SD: Coronene 191-07-1	5	μg/kg	<5	25 μg/kg	123	68.0	136
EP132B-SD: Sum of PAHs	4	μg/kg	<4				
Sub-Matrix: WATER			Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 6122865)							
EG020A-T: Antimony 7440-36-0	0.001	mg/L	<0.001	0.02 mg/L	# 133	87.0	115
EG020A-T: Arsenic 7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	108	88.0	112
EG020A-T: Cadmium 7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	88.0	111
EG020A-T: Chromium 7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	107	89.0	115
EG020A-T: Copper 7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	88.0	116
EG020A-T: Lead 7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.4	89.0	112
EG020A-T: Nickel 7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	105	88.0	116
EG020A-T: Zinc 7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	84.0	114
EG020T: Total Metals by ICP-MS (QCLot: 6122869)							
EG020B-T: Silver 7440-22-4	0.001	mg/L	<0.001	0.016 mg/L	93.0	84.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6122883)							
EG035T: Mercury 7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.4	84.0	118
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6'	138301)						
EK059G: Nitrite + Nitrate as N	0.01	mg/L	<0.01	0.5 mg/L	95.7	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6137851)							
EK061G: Total Kjeldahl Nitrogen as N	0.1	mg/L	<0.1	1 mg/L	104	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6137852)							
EK067G: Total Phosphorus as P	0.01	mg/L	<0.01	0.442 mg/L	98.7	84.7	106
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6119498)							
EP075(SIM): Naphthalene 91-20-3	1	μg/L	<1.0	10 μg/L	71.4	50.0	110
EP075(SIM): Acenaphthylene 208-96-8	1	μg/L	<1.0	10 μg/L	70.6	49.0	124
EP075(SIM): Acenaphthene 83-32-9	1	μg/L	<1.0	10 μg/L	72.3	55.0	114
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Sub-Matrix: WATER			Method Blank (MB)	Laboratory Control Spike (LCS) Report			
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6119498) -	continued						
EP075(SIM): Fluorene 86-73-7	1	μg/L	<1.0	10 μg/L	69.0	55.0	119
EP075(SIM): Phenanthrene 85-01-8	1	μg/L	<1.0	10 μg/L	72.1	51.0	127
EP075(SIM): Anthracene 120-12-7	1	μg/L	<1.0	10 μg/L	75.4	55.0	127
EP075(SIM): Fluoranthene 206-44-0	1	μg/L	<1.0	10 μg/L	72.6	55.0	127
EP075(SIM): Pyrene 129-00-0	1	μg/L	<1.0	10 μg/L	72.4	54.0	126
EP075(SIM): Benz(a)anthracene 56-55-3	1	μg/L	<1.0	10 μg/L	72.0	47.0	136
EP075(SIM): Chrysene 218-01-9	1	μg/L	<1.0	10 μg/L	70.6	51.0	129
EP075(SIM): Benzo(b+j)fluoranthene 205-99-2 205-82-3	1	μg/L	<1.0	10 μg/L	77.4	55.0	132
EP075(SIM): Benzo(k)fluoranthene 207-08-9	1	μg/L	<1.0	10 μg/L	73.1	58.0	128
EP075(SIM): Benzo(a)pyrene 50-32-8	0.5	μg/L	<0.5	10 μg/L	76.7	55.0	131
EP075(SIM): Indeno(1.2.3.cd)pyrene 193-39-5	1	μg/L	<1.0	10 μg/L	76.7	52.0	133
EP075(SIM): Dibenz(a.h)anthracene 53-70-3	1	μg/L	<1.0	10 μg/L	70.6	48.0	137
EP075(SIM): Benzo(g.h.i)perylene 191-24-2	1	μg/L	<1.0	10 μg/L	76.1	53.0	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6119494)							
EP071: C10 - C14 Fraction	50	μg/L	<50	1192 μg/L	103	51.9	126
EP071: C15 - C28 Fraction	100	μg/L	<100	1390 μg/L	94.1	51.4	124
EP071: C29 - C36 Fraction	50	μg/L	<50				
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6133985)							
EP080: C6 - C9 Fraction	20	μg/L	<20	180 μg/L	103	77.0	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC	CLot: 6119494)						
EP071: >C10 - C16 Fraction	100	μg/L	<100	1592 μg/L	100	51.0	133
EP071: >C16 - C34 Fraction	100	μg/L	<100	932 μg/L	93.6	49.5	123
EP071: >C34 - C40 Fraction	100	μg/L	<100				
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (Q0	CLot: 6133985)						
EP080: C6 - C10 Fraction C6_C10	20	μg/L	<20	225 μg/L	99.1	76.0	121
EP080: C6 - C10 Fraction minus BTEX (F1) C6_C10-BTE X	20	μg/L	<20				
EP080: BTEXN (QCLot: 6133985)							
EP080: Benzene 71-43-2	1	μg/L	<1	10 μg/L	98.6	79.8	115
EP080: Toluene 108-88-3	2	μg/L	<2	10 μg/L	96.1	78.6	116
EP080: Ethylbenzene 100-41-4	2	μg/L	<2	10 μg/L	91.5	77.3	115
EP080: meta- & para-Xylene 108-38-3 106-42-3	2	μg/L	<2	20 μg/L	93.9	82.0	118
EP080: ortho-Xylene 95-47-6	2	μg/L	<2	10 μg/L	99.7	86.0	119

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP



Sub-Matrix: WATER				Method Blank (MB)		S) Report		
				Report	Spike	Spike Recovery (%) Acc		Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 6133985) - continued								
EP080: Total Xylenes		2	μg/L	<2				
EP080: Sum of BTEX		1	μg/L	<1				
EP080: Naphthalene	91-20-3	5	μg/L	<5	10 μg/L	95.3	77.8	116
EP090: Organotin Compounds (Soluble) (QCLot: 6131086)								
EP090S: Tributyltin	56573-85-4	2	ngSn/L	<2	147 ngSn/L	84.8	30.7	134

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				Ma	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Acceptable	Limits (%)
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Re	coverable Mercury by FIMS (Low Level) (QCLot: 61190	018)					
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EG035T-LL: Mercury	7439-97-6	0.5 mg/kg	85.4	70.0	130
EG020-SD: Total N	letals in Sediments by ICPMS (QCLot: 6119017)						
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EG020-SD: Arsenic	7440-38-2	50 mg/kg	80.1	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	83.8	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	80.1	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	81.9	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	82.1	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	83.4	70.0	130
		EG020-SD: Selenium	7782-49-2	50 mg/kg	81.6	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	80.4	70.0	130
EK059G: Nitrite p	us Nitrate as N (NOx) by Discrete Analyser (QCLot: 6	119652)					
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EK059G: Nitrite + Nitrate as N (Sol.)		2.5 mg/kg	95.0	70.0	130
EK061G: Total Kje	ldahl Nitrogen By Discrete Analyser (QCLot: 6119029)						
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		500 mg/kg	85.5	70.0	130
EK067G: Total Pho	osphorus as P by Discrete Analyser (QCLot: 6119028)						
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		100 mg/kg	93.7	70.0	130
EP080/071: Total F	Petroleum Hydrocarbons (QCLot: 6119060)						
EB2435154-018	Field Blank 1	EP080: C6 - C9 Fraction		8 mg/kg	82.1	70.0	130
EP080/071: Total F	Recoverable Hydrocarbons - NEPM 2013 Fractions (QC	CLot: 6119060)					
EB2435154-018	Field Blank 1	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	80.2	70.0	130
EP080: BTEXN (Q	CLot: 6119060)						
EB2435154-018	Field Blank 1	EP080: Benzene	71-43-2	2 mg/kg	95.1	70.0	130

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Sub-Matrix: SOIL		М	atrix Spike (MS) Repor	t			
				Spike	7 7 7		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (C	QCLot: 6119060) - continued						
EB2435154-018	Field Blank 1	EP080: Toluene	108-88-3	2 mg/kg	84.2	70.0	130
FP080-SD / FP071	1-SD: Total Petroleum Hydrocarbons (QCLot: 6119061						
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C9 Fraction		8 mg/kg	74.0	70.0	130
				o mg/kg	74.0	70.0	100
	1-SD: Total Petroleum Hydrocarbons (QCLot: 6119109						
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EP071-SD-SV: C10 - C14 Fraction		189 mg/kg	87.4	70.0	130
		EP071-SD-SV: C15 - C28 Fraction		203 mg/kg	91.2	70.0	130
EP080-SD / EP071	1-SD: Total Recoverable Hydrocarbons (QCLot: 61190	61)					
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C10 Fraction	C6_C10	8 mg/kg	72.0	70.0	130
EP080-SD / EP071	1-SD: Total Recoverable Hydrocarbons (QCLot: 61191	09)					
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EP071-SD-SV: >C10 - C16 Fraction		251 mg/kg	88.4	70.0	130
		EP071-SD-SV: >C16 - C34 Fraction		133 mg/kg	91.7	70.0	130
EP080-SD: BTEXE	N (QCLot: 6119061)						
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EP080-SD: Benzene	71-43-2	2 mg/kg	77.9	70.0	130
EBE 100 10 1 002	TREE FROED STIP tray analysis until robults some back	EP080-SD: Toluene	108-88-3	2 mg/kg	75.2	70.0	130
ED000: Organistic	Compounds (QCLot: 6119110)	El 000-0D. Toldelle	100 00 0	99	. 0.2		.00
			70700 54 0	1.05 0.1	" 4 4	22.2	100
EB2435154-002	RB2 HOLD - chip tray analysis until results come back	EP090: Monobutyltin	78763-54-9	1.25 μgSn/kg	# 4.4	20.0	130
		EP090: Dibutyltin	1002-53-5 56573-85-4	1.25 μgSn/kg	47.6 62.0	20.0	130 130
		EP090: Tributyltin	50573-85-4	1.25 μgSn/kg	62.0	20.0	130
	lear Aromatic Hydrocarbons (QCLot: 6120567)						
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP132B-SD: Naphthalene	91-20-3	25 μg/kg	103	70.0	130
		EP132B-SD: 2-Methylnaphthalene	91-57-6	25 μg/kg	112	70.0	130
		EP132B-SD: Acenaphthylene	208-96-8	25 μg/kg	110	70.0	130
		EP132B-SD: Acenaphthene	83-32-9	25 μg/kg	112	70.0	130
		EP132B-SD: Fluorene	86-73-7	25 μg/kg	119	70.0	130
		EP132B-SD: Phenanthrene	85-01-8	25 μg/kg	120	70.0	130
		EP132B-SD: Anthracene	120-12-7	25 μg/kg	97.6	70.0	130 130
		EP132B-SD: Fluoranthene	206-44-0 129-00-0	25 μg/kg	113 112	70.0	
		EP132B-SD: Pyrene	56-55-3	25 μg/kg	117	70.0 70.0	130 130
		EP132B-SD: Benz(a)anthracene	218-01-9	25 μg/kg 25 μg/kg	111	70.0	130
		EP132B-SD: Chrysene		25 μg/kg 25 μg/kg	91.6	70.0	130
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2 205-82-3	20 μg/kg	91.0	70.0	130
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	25 μg/kg	108	70.0	130
		EP132B-SD: Benzo(e)pyrene	192-97-2	25 μg/kg 25 μg/kg	91.8	70.0	130
		EP132B-SD: Benzo(a)pyrene	50-32-8	25 μg/kg 25 μg/kg	100	70.0	130
		EP132B-SD: Perylene	198-55-0	25 μg/kg	99.3	70.0	130
		EP132B-SD: Benzo(g.h.i)perylene	191-24-2	25 μg/kg	118	70.0	130
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Client : BMT COMMERCIAL AUSTRALIA PTY LTD





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: Polynucle	ear Aromatic Hydrocarbons (QCLot: 6120567) - conti	inued					
EB2435154-001	RB1 HOLD - chip tray analysis until results come back	EP132B-SD: Dibenz(a.h)anthracene	53-70-3	25 μg/kg	120	70.0	130
		EP132B-SD: Indeno(1.2.3.cd)pyrene	193-39-5	25 μg/kg	116	70.0	130
		EP132B-SD: Coronene	191-07-1	25 μg/kg	121	70.0	130
Sub-Matrix: WATER				Ma	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Acceptable	Limits (%)
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Met	als by ICP-MS (QCLot: 6122865)						
EB2435154-017	Rinsate	EG020A-T: Arsenic	7440-38-2	1 mg/L	108	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	104	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	91.3	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	91.5	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	91.7	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.8	70.0	130
EG035T: Total Red	coverable Mercury by FIMS (QCLot: 6122883)						
EB2435165-010	Anonymous	EG035T: Mercury	7439-97-6	0.05 mg/L	76.6	70.0	130
EK059G: Nitrite pl	us Nitrate as N (NOx) by Discrete Analyser (QCLot:	6138301)					
EB2435960-002	Anonymous	EK059G: Nitrite + Nitrate as N		0.5 mg/L	93.7	70.0	130
EK061G: Total Kie	dahl Nitrogen By Discrete Analyser (QCLot: 6137851						
EB2434395-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		10 mg/L	# Not	70.0	130
		EROOTO. Total Neldam Millogen as N			Determined	. 0.0	
EK067G: Total Pho	sphorus as P by Discrete Analyser (QCLot: 6137852)					
EB2434395-002	Anonymous	EK067G: Total Phosphorus as P		2 mg/L	# Not	70.0	130
		Littoor G. Total i Hospitorus as i		g/_	Determined	. 0.0	
EP080/071: Total P	etroleum Hydrocarbons (QCLot: 6133985)				Botominou		
EB2435392-001	Anonymous	EP080: C6 - C9 Fraction		40 μg/L	88.7	70.0	130
				10 Mg/ 2	5 6	7 0.0	.00
EB2435392-001	ecoverable Hydrocarbons - NEPM 2013 Fractions (Q Anonymous		C6 C10	40 μg/L	89.6	70.0	130
		EP080: C6 - C10 Fraction	C0_C10	40 µg/L	09.0	70.0	130
EP080: BTEXN (Q							
EB2435392-001	Anonymous	EP080: Benzene	71-43-2	10 μg/L	101	70.0	130
		EP080: Toluene	108-88-3	10 μg/L	97.7	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EB2435154** Page : 1 of 25

Client : BMT COMMERCIAL AUSTRALIA PTY LTD Laboratory : Environmental Division Brisbane

Contact: Freddie PastorelliTelephone: +61-7-3552-8685Project: 003344 PoB (Bundaberg) 2024 SAPDate Samples Received: 11-Oct-2024

Site : Port of Bundaberg | Issue Date : 24-Oct-2024

Sampler : ANGUS WILLIAMS, FELIX REYNOLDS No. of samples received : 19
Order number :- No. of samples analysed : 19

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 Duplicate outliers occur.
- Laboratory Control outliers exist please see following pages for full details.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.

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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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP

ALS

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
Matrix Spike (MS) Recoveries							
EP090: Organotin Compounds	EB2435154002	RB2 HOLD - chip tray analysis	Monobutyltin	78763-54-9	4.4 %	20.0-130%	Recovery less than lower data quality
							objective

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EG020T: Total Metals by ICP-MS	QC-6122867-003		Antimony	7440-36-0	133 %	87.0-115%	Recovery greater than upper control
							limit
Matrix Spike (MS) Recoveries							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	EB2434395002	Anonymous	Total Kjeldahl Nitrogen		Not		MS recovery not determined,
			as N		Determined		background level greater than or
							equal to 4x spike level.
EK067G: Total Phosphorus as P by Discrete Analyser	EB2434395002	Anonymous	Total Phosphorus as P		Not		MS recovery not determined,
					Determined		background level greater than or
							equal to 4x spike level.

Outliers : Analysis Holding Time Compliance

Matrix: SOIL

Method	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days	Date analysed	Due for analysis	Days
EARSEL Mainture Content (Dried @ 105 140°C)			overdue			overdue
EA055: Moisture Content (Dried @ 105-110°C)	<u> </u>	<u> </u>		l		<u> </u>
Soil Glass Jar - Unpreserved				45 0-4 0004	10.0-4.0004	_
l6 - HOLD - chip tray analysis until results come back				15-Oct-2024	10-Oct-2024	5
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
Field blank 2	15-Oct-2024	14-Oct-2024	1	15-Oct-2024	14-Oct-2024	1
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Soil Glass Jar - Unpreserved						
Field blank 2	15-Oct-2024	14-Oct-2024	1	15-Oct-2024	14-Oct-2024	1
EP080: BTEXN						
Soil Glass Jar - Unpreserved						
Field blank 2	15-Oct-2024	14-Oct-2024	1	15-Oct-2024	14-Oct-2024	1
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
I6 - HOLD - chip tray analysis until results come back	15-Oct-2024	10-Oct-2024	5	15-Oct-2024	10-Oct-2024	5
Soil Glass Jar - Unpreserved						
I6 - HOLD - chip tray analysis until results come back	15-Oct-2024	10-Oct-2024	5			
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons						

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



Matrix: SOIL

Method	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days	Date analysed	Due for analysis	Days
			overdue			overdue
EP080-SD / EP071-SD: Total Recoverable Hydrocarbons - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
I6 - HOLD - chip tray analysis until results come back	15-Oct-2024	10-Oct-2024	5	15-Oct-2024	10-Oct-2024	5
Soil Glass Jar - Unpreserved						
I6 - HOLD - chip tray analysis until results come back	15-Oct-2024	10-Oct-2024	5			
EP080-SD: BTEXN						
Soil Glass Jar - Unpreserved						
I6 - HOLD - chip tray analysis until results come back	15-Oct-2024	10-Oct-2024	5	15-Oct-2024	10-Oct-2024	5
EP132B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
I6 - HOLD - chip tray analysis until results come back	15-Oct-2024	10-Oct-2024	5			

Matrix: WATER

Matrix: WATER						
Method	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days	Date analysed	Due for analysis	Days
			overdue			overdue
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved						
Rinsate	16-Oct-2024	14-Oct-2024	2			
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved						
Rinsate	16-Oct-2024	14-Oct-2024	2			
Amber VOC Vial - Sulfuric Acid						
Rinsate	22-Oct-2024	21-Oct-2024	1	24-Oct-2024	21-Oct-2024	3
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Amber Glass Bottle - Unpreserved						
Rinsate	16-Oct-2024	14-Oct-2024	2			
Amber VOC Vial - Sulfuric Acid						
Rinsate	22-Oct-2024	21-Oct-2024	1	24-Oct-2024	21-Oct-2024	3
EP080: BTEXN						
Amber VOC Vial - Sulfuric Acid						
Rinsate	22-Oct-2024	21-Oct-2024	1	24-Oct-2024	21-Oct-2024	3
EP090: Organotin Compounds (Soluble)						
Amber Glass Bottle - Unpreserved						
Rinsate	19-Oct-2024	14-Oct-2024	5			

Outliers : Frequency of Quality Control Samples

Matrix: SOIL

Quality Control Sample Type		Co	unt	Rate	(%)	Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DLIP)						

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



Matrix: SOIL

Quality Control Sample Type		Count		Rate	e (%)	Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP) - Continued						
Soil Particle Density	EA152	0	16	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: WATER

Matrix: WATER						
Quality Control Sample Type		Co	unt	Rate	€ (%)	Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Organotin Compounds (Soluble)	EP090S	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Organotin Compounds (Soluble)	EP090S	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

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 <u>VOC in soils</u> 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: **x** = Holding time breach ; ✓ = Within holding time.

Matrix. SOIL					Lvaluation	. * - Holding time	breach, • - with	ir noluling time
Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-A: Actual Acidity								
Pulp Bag (EA033) RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	22-Oct-2024	08-Oct-2025	1	22-Oct-2024	20-Jan-2025	✓
come back, E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back, M7b - HOLD - chip tray analysis until results come back	M9 - HOLD - chip tray analysis until results come							
Pulp Bag (EA033)								

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time
Method		Sample Date	E)	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-A: Actual Acidity - Continued								
RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	22-Oct-2024	09-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
come back,								
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,								
RB5 - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033)				40.0.4.0005				
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	22-Oct-2024	10-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
Pulp Bag (EA033)		26-Sep-2024	22-Oct-2024	26-Sep-2025	1	22-Oct-2024	20-Jan-2025	
I6 - HOLD - chip tray analysis until results come back		20-3ep-2024	22-001-2024	20-0ер-2020	✓	22-001-2024	20-0411-2020	✓
EA033-B: Potential Acidity		<u> </u>	<u>'</u>	<u> </u>	<u> </u>	<u> </u>	l	1
Pulp Bag (EA033)	DDZ LIOLD ship trov analysis watil records	08-Oct-2024	22-Oct-2024	08-Oct-2025	1	22-Oct-2024	20-Jan-2025	
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	00-001-2024	22-001-2024	00-001-2023	-	22-001-2024	20-3411-2023	✓
come back,	14 LIOLD ship tray analysis until results same							
E1 - HOLD - chip tray analysis until results come back, back,	I4 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back,	INT a - HOLD - Chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back,	M9 - HOLD - chip tray analysis until results come							
back.	ivia - 110LD - Chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033)								
RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	22-Oct-2024	09-Oct-2025	1	22-Oct-2024	20-Jan-2025	1
come back.	, ,							,
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,	, ,							
RB5 - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	22-Oct-2024	10-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
Pulp Bag (EA033)				00.0 005-			00 1 005-	
l6 - HOLD - chip tray analysis until results come back		26-Sep-2024	22-Oct-2024	26-Sep-2025	✓	22-Oct-2024	20-Jan-2025	✓

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Within	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-C: Acid Neutralising Capacity								
Pulp Bag (EA033)								
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	22-Oct-2024	08-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
come back,								
E1 - HOLD - chip tray analysis until results come back,	I4 - HOLD - chip tray analysis until results come							
back,								
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back,								
M8 - HOLD - chip tray analysis until results come back,	M9 - HOLD - chip tray analysis until results come							
back,								
M7b - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033)	DDO HOLD while two conducts will small	00 0-4 2024	22-Oct-2024	09-Oct-2025		22-Oct-2024	20-Jan-2025	
RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	22-001-2024	09-001-2025	✓	22-001-2024	20-Jan-2025	✓
come back,	DD4 HOLD while two conducts will small							
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,								
RB5 - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	22-Oct-2024	10-Oct-2025	1	22-Oct-2024	20-Jan-2025	
Pulp Bag (EA033)		10 001 202 1						
I6 - HOLD - chip tray analysis until results come back		26-Sep-2024	22-Oct-2024	26-Sep-2025	✓	22-Oct-2024	20-Jan-2025	✓
EA033-D: Retained Acidity								
Pulp Bag (EA033)								
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	22-Oct-2024	08-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
come back,								
E1 - HOLD - chip tray analysis until results come back,	I4 - HOLD - chip tray analysis until results come							
back,								
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back,								
M8 - HOLD - chip tray analysis until results come back,	M9 - HOLD - chip tray analysis until results come							
back,								
M7b - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033)	DDQ LIQLD, ship tray analysis with results	09-Oct-2024	22-Oct-2024	09-Oct-2025		22-Oct-2024	20-Jan-2025	
RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-OCI-2024	22-001-2024	09-001-2025	✓	22-001-2024	20-Jan-2025	✓
come back,	DD4 LIOLD ship troy analysis until results							
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,								
RB5 - HOLD - chip tray analysis until results come back Pulp Bag (EA033)		+						
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	22-Oct-2024	10-Oct-2025	1	22-Oct-2024	20-Jan-2025	✓
Pulp Bag (EA033)								-
I6 - HOLD - chip tray analysis until results come back		26-Sep-2024	22-Oct-2024	26-Sep-2025	✓	22-Oct-2024	20-Jan-2025	✓

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Soil Glass Jar - Unpreserved (EA055)

Soil Glass Jar - Unpreserved (EA055)

E2 - HOLD - chip tray analysis until results come back

16 - HOLD - chip tray analysis until results come back

Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP



Matrix: SOIL					Evaluation	: × = Holding time	breach; ✓ = Withi	n holding ti
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-E: Acid Base Accounting								
Pulp Bag (EA033) RB6 - HOLD - chip tray analysis until results come back, come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	22-Oct-2024	08-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Pulp Bag (EA033) RB1 - HOLD - chip tray analysis until results come back, come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	22-Oct-2024	09-Oct-2025	✓	22-Oct-2024	20-Jan-2025	✓
RB3 - HOLD - chip tray analysis until results come back, come back, RB5 - HOLD - chip tray analysis until results come back	RB4 - HOLD - chip tray analysis until results							
Pulp Bag (EA033)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	22-Oct-2024	10-Oct-2025	1	22-Oct-2024	20-Jan-2025	1
Pulp Bag (EA033) I6 - HOLD - chip tray analysis until results come back		26-Sep-2024	22-Oct-2024	26-Sep-2025	1	22-Oct-2024	20-Jan-2025	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) RB6 - HOLD - chip tray analysis until results come back, come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024				15-Oct-2024	22-Oct-2024	✓
E1 - HOLD - chip tray analysis until results come back, back,	I4 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EA055) RB1 - HOLD - chip tray analysis until results come back, come back.	RB2 - HOLD - chip tray analysis until results	09-Oct-2024				15-Oct-2024	23-Oct-2024	✓
RB3 - HOLD - chip tray analysis until results come back, come back.	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								

10-Oct-2024

26-Sep-2024

15-Oct-2024

15-Oct-2024

24-Oct-2024

10-Oct-2024

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time
Method		Sample Date	E)	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Particle Sizing								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024				24-Oct-2024	06-Apr-2025	✓
come back, E1 - HOLD - chip tray analysis until results come back, back.	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back.	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) RB1 - HOLD - chip tray analysis until results come back, come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024				24-Oct-2024	07-Apr-2025	✓
RB3 - HOLD - chip tray analysis until results come back, come back, RB5 - HOLD - chip tray analysis until results come back	RB4 - HOLD - chip tray analysis until results							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024				24-Oct-2024	08-Apr-2025	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024				24-Oct-2024	25-Mar-2025	√
EA150: Soil Classification based on Particle Size								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024				24-Oct-2024	06-Apr-2025	✓
come back, E1 - HOLD - chip tray analysis until results come back, back.	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back, M7b - HOLD - chip tray analysis until results come back	M9 - HOLD - chip tray analysis until results come							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)								
RB1 - HOLD - chip tray analysis until results come back, come back.	RB2 - HOLD - chip tray analysis until results	09-Oct-2024				24-Oct-2024	07-Apr-2025	✓
RB3 - HOLD - chip tray analysis until results come back, come back.	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024				24-Oct-2024	08-Apr-2025	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024				24-Oct-2024	25-Mar-2025	√

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Matrix: SOIL					Evaluation	n: × = Holding time	breach ; ✓ = Withi	n holding tim
Method		Sample Date	E)	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA152: Soil Particle Density								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA152) RB6 - HOLD - chip tray analysis until results come back, come back.	RB7 - HOLD - chip tray analysis until results	08-Oct-2024				24-Oct-2024	06-Apr-2025	✓
E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back Snap Lock Bag - Friable Asbestos/PSD Bag (EA152)								
RB1 - HOLD - chip tray analysis until results come back, come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024				24-Oct-2024	07-Apr-2025	✓
RB3 - HOLD - chip tray analysis until results come back, come back.	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA152)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024				24-Oct-2024	08-Apr-2025	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA152) I6 - HOLD - chip tray analysis until results come back		26-Sep-2024				24-Oct-2024	25-Mar-2025	✓
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD) RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	06-Apr-2025	✓	17-Oct-2024	06-Apr-2025	✓
come back, E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back.	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EG005-SD) RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	07-Apr-2025	1	17-Oct-2024	07-Apr-2025	1
come back,				·	_			•
RB3 - HOLD - chip tray analysis until results come back, come back,	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EG005-SD) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	08-Apr-2025	1	17-Oct-2024	08-Apr-2025	√
Soil Glass Jar - Unpreserved (EG005-SD) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	25-Mar-2025	1	17-Oct-2024	25-Mar-2025	✓

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Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding tir
Method		Sample Date	E	traction / 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) RB6 - HOLD - chip tray analysis until results come back, come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	06-Apr-2025	✓	17-Oct-2024	06-Apr-2025	✓
E1 - HOLD - chip tray analysis until results come back, back,	I4 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back, M7b - HOLD - chip tray analysis until results come back	M9 - HOLD - chip tray analysis until results come							
Soil Glass Jar - Unpreserved (EG020-SD) RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	07-Apr-2025	1	17-Oct-2024	07-Apr-2025	✓
come back, RB3 - HOLD - chip tray analysis until results come back, come back.	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EG020-SD) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	08-Apr-2025	1	17-Oct-2024	08-Apr-2025	✓
Soil Glass Jar - Unpreserved (EG020-SD) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	25-Mar-2025	✓	17-Oct-2024	25-Mar-2025	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T-LL) RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	05-Nov-2024	✓	17-Oct-2024	05-Nov-2024	✓
come back, E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EG035T-LL) RB1 - HOLD - chip tray analysis until results come back, come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	06-Nov-2024	✓	17-Oct-2024	06-Nov-2024	✓
RB3 - HOLD - chip tray analysis until results come back, come back,	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EG035T-LL) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	07-Nov-2024	1	17-Oct-2024	07-Nov-2024	✓
Soil Glass Jar - Unpreserved (EG035T-LL) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	24-Oct-2024	1	17-Oct-2024	24-Oct-2024	

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Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analys	er							
Soil Glass Jar - Unpreserved (EK059G)								
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	16-Oct-2024	05-Nov-2024	✓	18-Oct-2024	18-Oct-2024	✓
come back,								
E1 - HOLD - chip tray analysis until results come back,	I4 - HOLD - chip tray analysis until results come							
back,	MT 1101D 1111							
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back, M8 - HOLD - chip tray analysis until results come back,	MO HOLD ship troy analysis until results some							
back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EK059G)								
RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	16-Oct-2024	06-Nov-2024	1	18-Oct-2024	18-Oct-2024	✓
come back,								·
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,								
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EK059G)		40.004.0004	40.0.4.0004	07 Nov. 2024		40.0.4.0004	10.0-4.0004	
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	16-Oct-2024	07-Nov-2024	✓	18-Oct-2024	18-Oct-2024	✓
Soil Glass Jar - Unpreserved (EK059G) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024	16-Oct-2024	24-Oct-2024	1	18-Oct-2024	18-Oct-2024	√
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Soil Glass Jar - Unpreserved (EK061G)		<u> </u>	<u> </u>			l		
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	05-Nov-2024	1	21-Oct-2024	12-Nov-2024	✓
come back,								,
E1 - HOLD - chip tray analysis until results come back,	14 - HOLD - chip tray analysis until results come							
back,								
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back,								
M8 - HOLD - chip tray analysis until results come back,	M9 - HOLD - chip tray analysis until results come							
back,								
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EK061G) RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	06-Nov-2024	1	21-Oct-2024	12-Nov-2024	1
come back,	TOLD - Only tray analysis until results	00 000 2024	10 000 2027	00 1101 202 1	_	21 001 2024		*
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,								
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EK061G)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	07-Nov-2024	✓	21-Oct-2024	12-Nov-2024	✓
Soil Glass Jar - Unpreserved (EK061G)		00.0005.1	45.0.4.005	24 0-4 2004		04.0.4.005.1	40 Nov. 2004	
l6 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	24-Oct-2024	✓	21-Oct-2024	12-Nov-2024	✓

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16 - HOLD - chip tray analysis until results come back



Matrix: SOIL Evaluation: **x** = Holding time breach; ✓ = Within holding time. Method Sample Date Extraction / Preparation Analysis Container / Client Sample ID(s) Due for extraction Evaluation Due for analysis Evaluation Date extracted Date analysed EK067G: Total Phosphorus as P by Discrete Analyser Soil Glass Jar - Unpreserved (EK067G) 05-Nov-2024 21-Oct-2024 12-Nov-2024 RB6 - HOLD - chip tray analysis until results come back, RB7 - HOLD - chip tray analysis until results 08-Oct-2024 15-Oct-2024 come back. E1 - HOLD - chip tray analysis until results come back, 14 - HOLD - chip tray analysis until results come 15 - HOLD - chip tray analysis until results come back. M7a - HOLD - chip trav analysis until results come M8 - HOLD - chip tray analysis until results come back, M9 - HOLD - chip tray analysis until results come M7b - HOLD - chip tray analysis until results come back Soil Glass Jar - Unpreserved (EK067G) 06-Nov-2024 21-Oct-2024 12-Nov-2024 09-Oct-2024 15-Oct-2024 RB1 - HOLD - chip tray analysis until results come back. RB2 - HOLD - chip tray analysis until results come back. RB3 - HOLD - chip tray analysis until results come back, RB4 - HOLD - chip tray analysis until results come back. RB5 - HOLD - chip tray analysis until results come back Soil Glass Jar - Unpreserved (EK067G) 10-Oct-2024 07-Nov-2024 12-Nov-2024 E2 - HOLD - chip tray analysis until results come back 15-Oct-2024 21-Oct-2024 Soil Glass Jar - Unpreserved (EK067G) 26-Sep-2024 15-Oct-2024 24-Oct-2024 21-Oct-2024 12-Nov-2024 16 - HOLD - chip tray analysis until results come back EP003: Total Organic Carbon (TOC) in Soil Pulp Bag (EP003) 05-Nov-2024 05-Nov-2024 RB6 - HOLD - chip tray analysis until results come back. RB7 - HOLD - chip tray analysis until results 08-Oct-2024 21-Oct-2024 21-Oct-2024 come back, E1 - HOLD - chip tray analysis until results come back, 14 - HOLD - chip tray analysis until results come back. 15 - HOLD - chip tray analysis until results come back, M7a - HOLD - chip tray analysis until results come M8 - HOLD - chip tray analysis until results come back, M9 - HOLD - chip tray analysis until results come M7b - HOLD - chip tray analysis until results come back Pulp Bag (EP003) 09-Oct-2024 21-Oct-2024 06-Nov-2024 21-Oct-2024 06-Nov-2024 RB1 - HOLD - chip tray analysis until results come back, RB2 - HOLD - chip tray analysis until results come back, RB3 - HOLD - chip tray analysis until results come back, RB4 - HOLD - chip tray analysis until results come back, RB5 - HOLD - chip tray analysis until results come back Pulp Bag (EP003) 10-Oct-2024 21-Oct-2024 07-Nov-2024 21-Oct-2024 07-Nov-2024 E2 - HOLD - chip tray analysis until results come back 1 Pulp Bag (EP003) 24-Oct-2024 24-Oct-2024

26-Sep-2024

21-Oct-2024

21-Oct-2024

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Matrix: SOIL				Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method	Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) Field Blank 1	09-Oct-2024	15-Oct-2024	23-Oct-2024	✓	15-Oct-2024	23-Oct-2024	✓
Soil Glass Jar - Unpreserved (EP080) Field blank 2	30-Sep-2024	15-Oct-2024	14-Oct-2024	<u>se</u>	15-Oct-2024	14-Oct-2024	se
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) Field Blank 1	09-Oct-2024	15-Oct-2024	23-Oct-2024	✓	15-Oct-2024	23-Oct-2024	√
Soil Glass Jar - Unpreserved (EP080) Field blank 2	30-Sep-2024	15-Oct-2024	14-Oct-2024	<u>se</u>	15-Oct-2024	14-Oct-2024	×
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) Field Blank 1	09-Oct-2024	15-Oct-2024	23-Oct-2024	✓	15-Oct-2024	23-Oct-2024	√
Soil Glass Jar - Unpreserved (EP080) Field blank 2	30-Sep-2024	15-Oct-2024	14-Oct-2024	Je	15-Oct-2024	14-Oct-2024	×

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 Matrix: SOIL
 Evaluation: x = Holding time breach; √ = Within holding time.

 Method
 Sample Date
 Extraction / Preparation
 Analysis

Method	Sample Date	Ex	traction / 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) RB6 - HOLD - chip tray analysis until results come back, come back.	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	22-Oct-2024	1	15-Oct-2024	22-Oct-2024	✓
E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back, M7b - HOLD - chip tray analysis until results come back	M9 - HOLD - chip tray analysis until results come							
Soil Glass Jar - Unpreserved (EP071-SD-SV)								
RB6 - HOLD - chip tray analysis until results come back, come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	22-Oct-2024	✓	21-Oct-2024	24-Nov-2024	✓
E1 - HOLD - chip tray analysis until results come back, back,	I4 - HOLD - chip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back,	M9 - HOLD - chip tray analysis until results come							
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP080-SD) RB1 - HOLD - chip tray analysis until results come back, come back.	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	23-Oct-2024	✓	15-Oct-2024	23-Oct-2024	✓
RB3 - HOLD - chip tray analysis until results come back, come back,	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP071-SD-SV) RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	23-Oct-2024	1	21-Oct-2024	24-Nov-2024	✓
come back, RB3 - HOLD - chip tray analysis until results come back, come back.	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP080-SD)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	24-Oct-2024	✓	15-Oct-2024	24-Oct-2024	✓
Soil Glass Jar - Unpreserved (EP071-SD-SV) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	24-Oct-2024	√	21-Oct-2024	24-Nov-2024	1
Soil Glass Jar - Unpreserved (EP080-SD)				2. 55. 2521		2. 55. 2027	2	▼
I6 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	10-Oct-2024	£	15-Oct-2024	10-Oct-2024	×
Soil Glass Jar - Unpreserved (EP071-SD-SV) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	10-Oct-2024	<u>k</u>	21-Oct-2024	24-Nov-2024	✓

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

Method		Sample Date	E	traction / 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)								
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	22-Oct-2024	✓	15-Oct-2024	22-Oct-2024	✓
come back,								
E1 - HOLD - chip tray analysis until results come back,	I4 - HOLD - chip tray analysis until results come							
back,								
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back,								
M8 - HOLD - chip tray analysis until results come back,	M9 - HOLD - chip tray analysis until results come							
back,								
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP071-SD-SV)				00.0.1.0004			04.81 0004	
RB6 - HOLD - chip tray analysis until results come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	22-Oct-2024	✓	21-Oct-2024	24-Nov-2024	✓
come back,								
E1 - HOLD - chip tray analysis until results come back,	I4 - HOLD - chip tray analysis until results come							
back,								
I5 - HOLD - chip tray analysis until results come back,	M7a - HOLD - chip tray analysis until results come							
back,								
M8 - HOLD - chip tray analysis until results come back,	M9 - HOLD - chip tray analysis until results come							
back,								
M7b - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP080-SD) RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	23-Oct-2024	1	15-Oct-2024	23-Oct-2024	,
come back,	RBZ - HOLD - Chip tray analysis until results	03-001-2024	13-001-2024	20 001 2024	'	13-001-2024	20 001 2024	✓
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back.	1104 - 110LD - Chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP071-SD-SV)								
RB1 - HOLD - chip tray analysis until results come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	23-Oct-2024	1	21-Oct-2024	24-Nov-2024	✓
come back,	p,,				_			•
RB3 - HOLD - chip tray analysis until results come back,	RB4 - HOLD - chip tray analysis until results							
come back,								
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP080-SD)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	24-Oct-2024	1	15-Oct-2024	24-Oct-2024	✓
Soil Glass Jar - Unpreserved (EP071-SD-SV)								
E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	24-Oct-2024	✓	21-Oct-2024	24-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080-SD)		00.0	45.0.4.000.1	40.0=1.0004		45.0-1.000	10.0=1.0004	
I6 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	10-Oct-2024	*	15-Oct-2024	10-Oct-2024	×
Soil Glass Jar - Unpreserved (EP071-SD-SV)		26-Sep-2024	15-Oct-2024	10-Oct-2024	40	21-Oct-2024	24-Nov-2024	,
I6 - HOLD - chip tray analysis until results come back		20-3ep-2024	10-001-2024	10-001-2024	*	21-001-2024	Z-1110V-Z0Z4	✓

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E2 - HOLD - chip tray analysis until results come back

I6 - HOLD - chip tray analysis until results come back

Soil Glass Jar - Frozen (EP090)



30-Nov-2024

30-Nov-2024

23-Oct-2024

24-Oct-2024

Adtrix: SOIL					Lvaluation		breach; ✓ = Withi	ir noiding t
Method		Sample Date		traction / 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) RB6 - HOLD - chip tray analysis until results come back, come back.	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	22-Oct-2024	✓	15-Oct-2024	22-Oct-2024	✓
E1 - HOLD - chip tray analysis until results come back, back,	14 - HOLD - chip tray analysis until results come							
15 - HOLD - chip tray analysis until results come back, back,	M7a - HOLD - chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, back, M7b - HOLD - chip tray analysis until results come back	M9 - HOLD - chip tray analysis until results come							
Soil Glass Jar - Unpreserved (EP080-SD)								
RB1 - HOLD - chip tray analysis until results come back, come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	23-Oct-2024	✓	15-Oct-2024	23-Oct-2024	✓
RB3 - HOLD - chip tray analysis until results come back, come back,	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
oil Glass Jar - Unpreserved (EP080-SD) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	24-Oct-2024	1	15-Oct-2024	24-Oct-2024	✓
oil Glass Jar - Unpreserved (EP080-SD) l6 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	10-Oct-2024	<u>se</u>	15-Oct-2024	10-Oct-2024	×
EP090: Organotin Compounds		<u></u>						
Roil Glass Jar - Frozen (EP090) RB6 - HOLD - chip tray analysis until results come back, come back,	RB7 - HOLD - chip tray analysis until results	08-Oct-2024	21-Oct-2024	03-Dec-2024	✓	23-Oct-2024	30-Nov-2024	✓
E1 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Frozen (EP090) 14 - HOLD - chip tray analysis until results come back, back,	15 - HOLD - chip tray analysis until results come	08-Oct-2024	21-Oct-2024	03-Dec-2024	✓	24-Oct-2024	30-Nov-2024	✓
M7a - HOLD - chip tray analysis until results come back, come back,	M8 - HOLD - chip tray analysis until results							
M9 - HOLD - chip tray analysis until results come back, back	M7b - HOLD - chip tray analysis until results come							
oil Glass Jar - Frozen (EP090)								
RB1 - HOLD - chip tray analysis until results come back, come back,	RB2 - HOLD - chip tray analysis until results	09-Oct-2024	21-Oct-2024	04-Dec-2024	✓	23-Oct-2024	30-Nov-2024	✓
RB3 - HOLD - chip tray analysis until results come back, come back,	RB4 - HOLD - chip tray analysis until results							
RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Frozen (EP090)								

10-Oct-2024

26-Sep-2024

21-Oct-2024

21-Oct-2024

05-Dec-2024

21-Nov-2024

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Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / 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) RB6 - HOLD - chip tray analysis until results come back, RB7 - H come back.	HOLD - chip tray analysis until results	08-Oct-2024	15-Oct-2024	22-Oct-2024	✓	19-Oct-2024	24-Nov-2024	✓
	hip tray analysis until results come							
I5 - HOLD - chip tray analysis until results come back, M7a - HOLD back,	- chip tray analysis until results come							
M8 - HOLD - chip tray analysis until results come back, M9 - HOLD - back	chip tray analysis until results come							
Soil Glass Jar - Unpreserved (EP132B-SD) M7b - HOLD - chip tray analysis until results come back		08-Oct-2024	15-Oct-2024	22-Oct-2024	✓	20-Oct-2024	24-Nov-2024	✓
	HOLD - chip tray analysis until results	09-Oct-2024	15-Oct-2024	23-Oct-2024	✓	19-Oct-2024	24-Nov-2024	✓
	HOLD - chip tray analysis until results							
come back, RB5 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP132B-SD) E2 - HOLD - chip tray analysis until results come back		10-Oct-2024	15-Oct-2024	24-Oct-2024	√	19-Oct-2024	24-Nov-2024	√
Soil Glass Jar - Unpreserved (EP132B-SD) 16 - HOLD - chip tray analysis until results come back		26-Sep-2024	15-Oct-2024	10-Oct-2024	x	19-Oct-2024	24-Nov-2024	√
Matrix: WATER			-		Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG020B-T) Rinsate		07-Oct-2024	16-Oct-2024	05-Apr-2025	✓	17-Oct-2024	05-Apr-2025	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T) Rinsate		07-Oct-2024				16-Oct-2024	04-Nov-2024	1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G) Rinsate		07-Oct-2024				23-Oct-2024	04-Nov-2024	√
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G) Rinsate		07-Oct-2024	23-Oct-2024	04-Nov-2024	✓	23-Oct-2024	04-Nov-2024	√
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G) Rinsate		07-Oct-2024	23-Oct-2024	04-Nov-2024	✓	23-Oct-2024	04-Nov-2024	✓

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Matrix: WATER				Evaluation	n: 🗴 = Holding time	breach; ✓ = Withi	n holding time	
Method	Sample Date	Ex	traction / Preparation			Analysis	is	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM)) Rinsate	07-Oct-2024	16-Oct-2024	14-Oct-2024	<u>se</u>	18-Oct-2024	25-Nov-2024	√	
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) Rinsate	07-Oct-2024	16-Oct-2024	14-Oct-2024	<u>se</u>	17-Oct-2024	25-Nov-2024	✓	
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate	07-Oct-2024	22-Oct-2024	21-Oct-2024	<u>\$£</u>	24-Oct-2024	21-Oct-2024	sc sc	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071) Rinsate	07-Oct-2024	16-Oct-2024	14-Oct-2024	<u>se</u>	17-Oct-2024	25-Nov-2024	✓	
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate	07-Oct-2024	22-Oct-2024	21-Oct-2024	<u>Je</u>	24-Oct-2024	21-Oct-2024	×	
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate	07-Oct-2024	22-Oct-2024	21-Oct-2024	<u>*</u>	24-Oct-2024	21-Oct-2024	*	
EP090: Organotin Compounds (Soluble)								
Amber Glass Bottle - Unpreserved (EP090S) Rinsate	07-Oct-2024	19-Oct-2024	14-Oct-2024	<u>se</u>	21-Oct-2024	28-Nov-2024	1	

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Client BMT COMMERCIAL AUSTRALIA PTY LTD 003344 PoB (Bundaberg) 2024 SAP **Project**



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.

Mosture Content EA055 2 19 10.53 10.00 V NEPM 2013 B3 & ALS QC Standard	Matrix: SOIL				Evaluatio	n: × = Quality Co	ntrol frequency i	not within specification ; ✓ = Quality Control frequency within specification
Elboardiscy Disclarists (OUT)	Quality Control Sample Type		Co	ount		Rate (%)		Quality Control Specification
Chromum Sulte for Acid Sulphine Solids	Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Mostlure and Nirate as N (NOx) - Soluble by Discrete EK0596 2 19 10.33 10.00	Laboratory Duplicates (DUP)							
Notice and Nitrote as N (NOx)- Soluble by Discrete Analyses Organotic Analysis Parks in Sediments by CCMS(SIM) EP128-SD 2 16 12.50 10.00	Chromium Suite for Acid Sulphate Soils	EA033	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Mayber	Moisture Content	EA055	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pogen	Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAMS in Sediments by GCMS(SIM)	Analyser							
Self Penticle Density	Organotin Analysis	EP090	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRN as N 9 Discrete Analyser	PAHs in Sediments by GCMS(SIM)	EP132B-SD	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	Soil Particle Density	EA152	0	16	0.00	10.00	x	NEPM 2013 B3 & ALS QC Standard
Total Mericury by FIMS (Low Level)	TKN as N By Discrete Analyser	EK061G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	Total Fe and Al in Sediments by ICPAES	EG005-SD	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	Total Mercury by FIMS (Low Level)	EG035T-LL	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	Total Metals in Sediments by ICPMS	EG020-SD	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fractions Only	Total Organic Carbon	EP003	3	30	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX EP080 0 3 0.00 10.00	Total Phosphorus By Discrete Analyser	EK067G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	TPH - Semivolatile Fractions Only	EP071-SD-SV	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS) Chromium Suite for Acid Sulphate Soils EA333 1 20 5.00 5.00 √ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Organotin Analysis EP090 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard PAHs in Sediments by GCMS(SIM) EP132B-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Soil Particle Density EA152 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TKN as N By Discrete Analyser EK061G 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Fe and Al in Sediments by ICPAES EG0605-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Metals in Sediments by ICPAES EG0805-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard <td>TRH Volatiles/BTEX</td> <td>EP080</td> <td>0</td> <td>3</td> <td>0.00</td> <td>10.00</td> <td>3£</td> <td>NEPM 2013 B3 & ALS QC Standard</td>	TRH Volatiles/BTEX	EP080	0	3	0.00	10.00	3£	NEPM 2013 B3 & ALS QC Standard
Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	TRH Volatiles/BTEX in Sediments	EP080-SD	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete	Laboratory Control Samples (LCS)							
Analyser Organotin Analysis PAHs in Sediments by GCMS(SIM) EP132B-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard PAHs in Sediments by GCMS(SIM) EP132B-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Soli Particle Density EKN610 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard TKN as N By Discrete Analyser EKN6610 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Fe and AI in Sediments by ICPAES EG005-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS (Low Level) EG035T-LL 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS (Low Level) EG035T-LL 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Organic Carbon Total Organic Carbon Forall Phosphorus By Discrete Analyser EK067G 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard TH- Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 5 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Chromium Suite for Acid Sulphate Soils	EA033	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organotin Analysis EP090 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard PAHs in Sediments by GCMS(SIM) EP132B-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Soil Particle Density EA152 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TKN as N By Discrete Analyser EK061G 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Fe and Al in Sediments by ICPAES EG005-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Metals in Sediments by ICPAES EG035-TL 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Metals in Sediments by ICPMS EG020-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Organic Carbon EP003 4 30 13.33 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser EK067G 2 1	Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM) EP132B-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TKN as N By Discrete Analyser EK061G EK061G	Analyser							
Soil Particle Density	Organotin Analysis	EP090	1	16	6.25	5.00	✓	
TKN as N By Discrete Analyser EK061G EK061G Z 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Fe and Al in Sediments by ICPAES EG005-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS (Low Level) EG035T-LL 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Metals in Sediments by ICPMS EG020-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Organic Carbon EP003 EP003 4 30 13.33 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser EK067G EP007 TH - Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD TRH Volatiles/BTEX in Sediments TRH Volatiles/BTEX in Sediments TRH Volati	PAHs in Sediments by GCMS(SIM)	EP132B-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES EG005-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS (Low Level) EG035T-LL 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Metals in Sediments by ICPMS EG020-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Organic Carbon EG020-SD Total Organic Carbon EF003 4 30 13.33 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser EK067G EF0071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TH- Semivolatile Fractions Only EF071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EF080 TRH Volatiles/BTEX in Sediments EF080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EF080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EF080-SD Total Phosphorus By Discrete Total Phosphorus By Discrete NEPM 2013 B3 & ALS QC Standard TH- Semivolatile Fractions Only NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EF080-SD Total Phosphorus By Discrete EF080-SD Total Phosphorus By Discrete EF080-SD Total Phosphorus By Discrete Total Phosphorus By Discrete NEPM 2013 B3 & ALS QC Standard	Soil Particle Density	EA152	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level) EG035T-LL 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Metals in Sediments by ICPMS EG020-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Organic Carbon EP003 EP003 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser EK067G EF007 Total Phosphorus By Discrete Analyser EK067G EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TPH - Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD TRH Volatiles/BTEX in Sediments TRH Volatiles/BTEX in Sediments TRH Volatiles/BTEX in Sediments TRH Volatil	TKN as N By Discrete Analyser	EK061G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS EG020-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Organic Carbon Total Phosphorus By Discrete Analyser EK067G EK067G Z 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser EK067G EK067G Z 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard TPH - Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Total Fe and Al in Sediments by ICPAES	EG005-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon EP003 4 30 13.33 10.00 ✓ NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser EK067G 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard TPH - Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Method Blanks (MB) Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Total Mercury by FIMS (Low Level)	EG035T-LL	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser EK067G 2 17 11.76 10.00 ✓ NEPM 2013 B3 & ALS QC Standard TPH - Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Method Blanks (MB) Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Total Metals in Sediments by ICPMS	EG020-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fractions Only EP071-SD-SV 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Method Blanks (MB) Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Total Organic Carbon	EP003	4	30	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX EP080 1 3 33.33 5.00 ✓ NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Method Blanks (MB) Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Total Phosphorus By Discrete Analyser	EK067G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments EP080-SD 1 16 6.25 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Method Blanks (MB) Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	TPH - Semivolatile Fractions Only	EP071-SD-SV	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB) Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	TRH Volatiles/BTEX	EP080	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	TRH Volatiles/BTEX in Sediments	EP080-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chromium Suite for Acid Sulphate Soils EA033 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 ✓ NEPM 2013 B3 & ALS QC Standard	Method Blanks (MB)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 20 5.00 5.00 V NEPM 2013 B3 & ALS QC Standard	Chromium Suite for Acid Sulphate Soils	EA033	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Analyser	Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
	Analyser							

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



Matrix: SOIL				Evaluatio	n: × = Quality Co	ontrol frequency i	not within specification ; ✓ = Quality Control frequency within specification
Quality Control Sample Type		С	ount		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Organotin Analysis	EP090	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fractions Only	EP071-SD-SV	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Analyser							
Organotin Analysis	EP090	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fractions Only	EP071-SD-SV	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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

Quality Control Sample Type		Со	unt		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	0	1	0.00	10.00	3c	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	10.00)£	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	2	1	200.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	11	0.00	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)							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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TRH Volatiles/BTEX

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Project : 003344 PoB (Bundaberg) 2024 SAP



Matrix: WATER Evaluation: × = Quality Control frequency not within specification; ✓ = Quality Control frequency within specification. Quality Control Sample Type Count Rate (%) Quality Control Specification Method Evaluation Analytical Methods QC Expected Regular Actual _aboratory Control Samples (LCS) - Continued Organotin Compounds (Soluble) NEPM 2013 B3 & ALS QC Standard EP090S 1 100.00 5.00 1 2 PAH/Phenols (GC/MS - SIM) 1 50.00 5.00 NEPM 2013 B3 & ALS QC Standard EP075(SIM) 1 Total Kjeldahl Nitrogen as N By Discrete Analyser 1 16 6.25 5.00 NEPM 2013 B3 & ALS QC Standard EK061G 1 Total Mercury by FIMS 1 20 NEPM 2013 B3 & ALS QC Standard EG035T 5.00 5.00 1 Total Metals by ICP-MS - Suite A 1 13 7.69 5.00 NEPM 2013 B3 & ALS QC Standard EG020A-T 1 Total Metals by ICP-MS - Suite B NEPM 2013 B3 & ALS QC Standard 1 1 EG020B-T 100.00 5.00 1 Total Phosphorus as P By Discrete Analyser 1 19 NEPM 2013 B3 & ALS QC Standard 5.26 5.00 EK067G TRH - Semivolatile Fraction 1 11 FP071 9.09 5.00 1 NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX 1 20 5.00 5.00 NEPM 2013 B3 & ALS QC Standard EP080 Method Blanks (MB) Nitrite and Nitrate as N (NOx) by Discrete Analyser 1 6 16.67 5.00 NEPM 2013 B3 & ALS QC Standard EK059G 1 Organotin Compounds (Soluble) 1 NEPM 2013 B3 & ALS QC Standard 1 100.00 EP090S 5.00 1 PAH/Phenols (GC/MS - SIM) 1 2 50.00 5.00 NEPM 2013 B3 & ALS QC Standard EP075(SIM) 1 Total Kjeldahl Nitrogen as N By Discrete Analyser 1 16 NEPM 2013 B3 & ALS QC Standard EK061G 6.25 5.00 Total Mercury by FIMS EG035T 1 20 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Metals by ICP-MS - Suite A 1 13 EG020A-T 7.69 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Metals by ICP-MS - Suite B 1 1 100.00 5.00 NEPM 2013 B3 & ALS QC Standard EG020B-T Total Phosphorus as P By Discrete Analyser 1 19 5.26 NEPM 2013 B3 & ALS QC Standard EK067G 5.00 ✓ TRH - Semivolatile Fraction 1 11 9.09 5.00 1 NEPM 2013 B3 & ALS QC Standard EP071 TRH Volatiles/BTEX 20 EP080 1 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Matrix Spikes (MS) Nitrite and Nitrate as N (NOx) by Discrete Analyser 6 NEPM 2013 B3 & ALS QC Standard EK059G 1 16.67 5.00 ✓ Organotin Compounds (Soluble) EP090S 0 0.00 5.00 NEPM 2013 B3 & ALS QC Standard 30 PAH/Phenols (GC/MS - SIM) 0 2 0.00 5.00 NEPM 2013 B3 & ALS QC Standard EP075(SIM) × Total Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1 16 6.25 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS 1 20 EG035T 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Metals by ICP-MS - Suite A EG020A-T 1 13 7.69 5.00 1 NEPM 2013 B3 & ALS QC Standard 19 Total Phosphorus as P By Discrete Analyser 1 NEPM 2013 B3 & ALS QC Standard EK067G 5.26 5.00 ✓ TRH - Semivolatile Fraction 0 11 0.00 5.00 NEPM 2013 B3 & ALS QC Standard EP071 ×

20

EP080

1

5.00

5.00

1

NEPM 2013 B3 & ALS QC Standard

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



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
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1: Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Total Fe and Al in Sediments by ICPAES	EG005-SD	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). LORs per NODG
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.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(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 SnCl2 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)
Nitrite and Nitrate as N (NOx)- 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 (NOx-N) and nitrate (NO3-N) by calculation, Combined oxidised Nitrogen (NO2+NO3) 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 + NOx) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO3- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrrogen, each determined seperately 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.
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 CO2) is automatically measured by infra-red detector.

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Analytical Methods	Method	Matrix	Method Descriptions
TPH - Semivolatile Fractions Only	EP071-SD-SV	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)
TRH Volatiles/BTEX	EP080	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. Compliant with NEPM Schedule B(3) amended.
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.
Organotin Analysis	EP090	SOIL	In house: Referenced to USEPA SW 846 - 8270 Prepared sample extracts are analysed by GC/MS coupled with high volume injection, and quantified against an established 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.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	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.
Total Metals by ICP-MS - Suite B	EG020B-T	WATER	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.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 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).
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. 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)

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Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenois (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)
Organotin Compounds (Soluble)	EP090S	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by GC/MS coupled with high volume injection and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
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.
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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).
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 (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.
Organotin Sample Preparation	ORG35	SOIL	In house: 20g sample is spiked with surrogate and leached in a methanol:acetic acid:UHP water mix and vacuum filtered. Reagents and solvents are added to the sample and the mixture tumbled. The butyltin compounds are simultaneously derivatised and extracted. The extract is further extracted with petroleum ether. The resultant extracts are combined and concentrated for analysis.
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

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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
N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		14/4-7-5	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.
Organotin Sample Preparation	ORG34	WATER	In house. A specified volume of sample is spiked with surrogate, acidified and vacuum filtered. Reagents and solvent are added and the mixture tumbled. The butyltin compounds is derivitisated, extracted and the subtitution reaction completed. The extract is transferred to a separatory funnel and further extracted two times with petroleum ether. The resultant extracts are combined and concentrated for analysis.

Certificate of Analysis

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 24-Oct-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

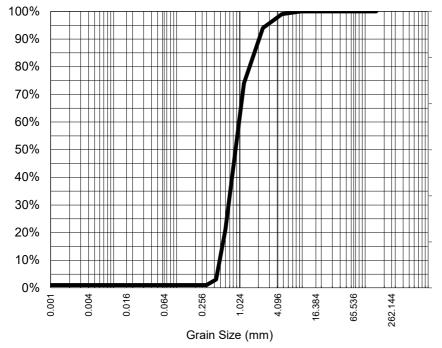
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-001 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: RB1 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Anal	vsis	Notes
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Samples analysed as received.

Particle Size (mm)	% Passing
9.50	100%
4.75	99%
2.36	94%
1.18	74%
0.600	21%
0.425	3%
0.300	1%
0.150	1%
0.075	1%
Particle Size (microns)	
54	1%
38	1%
27	1%
19	1%
14	1%
10	1%
7	1%
5	1%
1	1%

Median Particle Size (mm)*	0.917
Median Farticle Size (IIIII)	0.517

21-Oct-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.85

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Certificate of Analysis

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

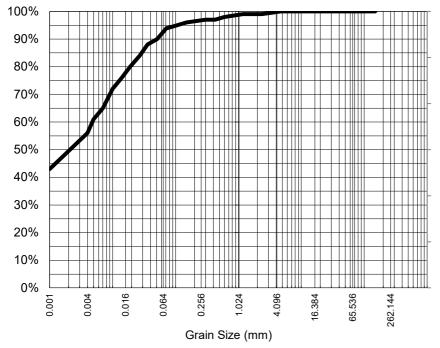
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-002 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: RB2 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

* Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Particle Size (mm)	% Passing
4.75	100%
2.36	99%
1.18	99%
0.600	98%
0.425	97%
0.300	97%
0.150	96%
0.075	94%
Particle Size (microns)	
51	90%
36	88%
27	84%
19	80%
14	76%
10	72%
7	65%
5	61%
1	43%

Median Particle Size (mm)*	< 0.007

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting:** 1%

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.42 (2.45)*

NATA Accreditation: 825 Site: Brisbane

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Satish Trivedi Soil Senior Chemist **Authorised Signatory**

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Certificate of Analysis

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 24-Oct-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

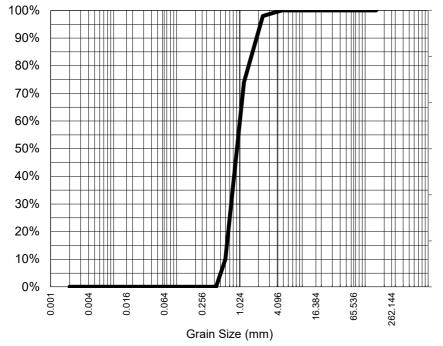
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-003 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: RB3 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analys	sis N	otes
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Samples analysed as received.

Particle Size (mm)	% Passing
4.75	100%
2.36	98%
1.18	74%
0.600	10%
0.425	0%
0.300	0%
0.150	0%
0.075	0%
Particle Size (microns)	

Median Particle Size (mm)*	0.963
----------------------------	-------

21-Oct-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.63

NATA Accreditation: 825 Site: Brisbane

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Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 24-Oct-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-004 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: RB4 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Samples analysed as received.

Particle Size (mm)	% Passing
2.36	100%
1.18	93%
0.600	50%
0.425	14%
0.300	6%
0.150	4%
0.075	3%
Particle Size (microns)	
55	3%
39	3%
27	3%
19	3%
14	3%
10	3%
7	3%
5	3%
1	3%

Median Particle Size (mm)*	0.600
Median Particle Size (mm)*	0.600

21-Oct-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.82

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Page 1 of 1 Template Version PKV8.0 180919

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-005 / PSD

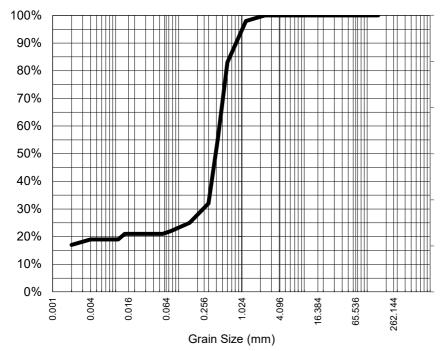
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: RB5 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

Particle Size (mm)	% Passing
2.36	100%
1.18	98%
0.600	83%
0.425	56%
0.300	32%
0.150	25%
0.075	22%
Particle Size (microns)	
56	21%
39	21%
28	21%
20	21%
14	21%
11	19%
7	19%
5	19%
2	17%

0.394 Median Particle Size (mm)*

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.62

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-006 / PSD

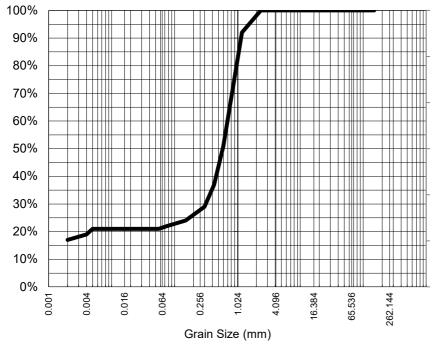
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: RB6 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analys	sis N	otes
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Samples analysed as received.

Particle Size (mm)	% Passing
2.36	100%
1.18	92%
0.600	51%
0.425	37%
0.300	29%
0.150	24%
0.075	22%
Particle Size (microns)	
56	21%
39	21%
28	21%
20	21%
14	21%
10	21%
7	21%
5	21%
2	17%

0.588 Median Particle Size (mm)*

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.6

NATA Accreditation: 825 Site: Brisbane

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ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-007 / PSD

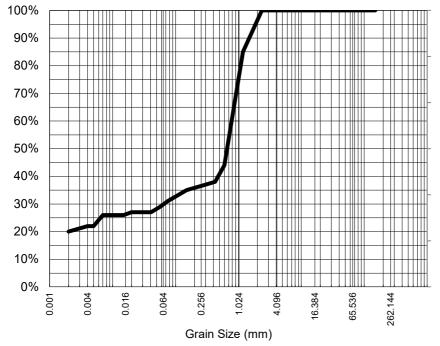
Spring Hill

Brisbane Qld **PROJECT:**

003344 PoB (Bundaberg) 2024 **SAMPLE ID:** RB7

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

Particle Size (mm)	% Passing
2.36	100%
1.18	85%
0.600	44%
0.425	38%
0.300	37%
0.150	35%
0.075	31%
Particle Size (microns)	
57	29%
41	27%
29	27%
20	27%
15	26%
10	26%
7	26%
5	22%
2	20%

0.685 Median Particle Size (mm)*

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.53

NATA Accreditation: 825 Site: Brisbane

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Satish Trivedi Soil Senior Chemist **Authorised Signatory**

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



% Passing

100%

98%

94% 84%

39%

16% 8%

6%

5%

5% 5%

5%

5%

5%

5%

5%

5%

5%

21-Oct-24

Particle Size (mm)

9.50

4.75

2.36

1.18

0.600

0.425

0.300

0.150

0.075

Particle Size (microns)

54

38

27

19

14

10

7

5

Analysed:

Brisbane QLD

Freddie Pastorelli DATE REPORTED: 24-Oct-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-008 / PSD

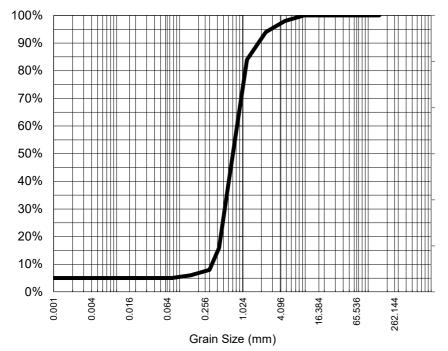
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 **E1**

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

* Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

Median Particle Size (mm)*	0.742
,	

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.91 (2.85)*

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Page 1 of 1 Template Version PKV8.0 180919

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ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-009 / PSD

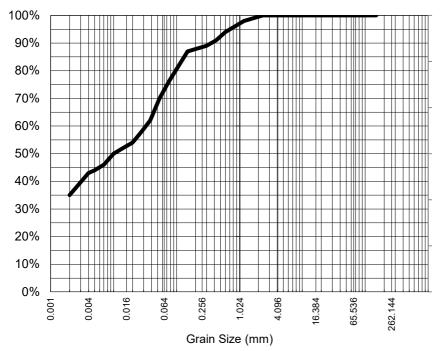
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: F2 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analys	sis N	otes
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Samples analysed as received.

Particle Size (mm)	% Passing
2.36	100%
1.18	98%
0.600	94%
0.425	91%
0.300	89%
0.150	87%
0.075	76%
Particle Size (microns)	
54	70%
38	62%
28	58%
20	54%
14	52%
10	50%
7	46%
5	44%
2	35%

0.010 Median Particle Size (mm)*

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.49

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental





CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

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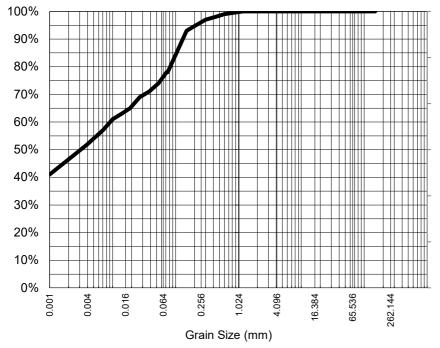
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-010 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 14

SAP

Particle Size Distribution



Analysis Notes

Test Method:

Samples analysed as received.

AS1289.3.6.2/AS1289.3.6.3

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

	_
Particle Size (mm)	% Passing
1.18	100%
0.600	99%
0.425	98%
0.300	97%
0.150	93%
0.075	78%
Particle Size (microns)	
54	74%
38	71%
27	69%
19	65%
14	63%
10	61%
7	57%
5	54%
1	41%

Median Particle Size (mm)*	< 0.007

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

Soil Particle Density (<2.36mm) 2.42 (2.45)*

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

^{*} Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

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ALS Environmental



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CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

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ADDRESS: Po Box 203 **REPORT NO:** EB2435154-011 / PSD

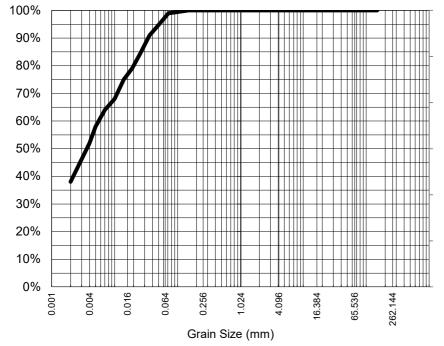
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 15

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

* Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

	_
Particle Size (mm)	% Passing
0.150	100%
0.075	99%
Particle Size (microns)	
51	95%
36	91%
25	84%
19	79%
14	75%
10	68%
7	64%
5	58%
2	38%

Median Particle Size (mm)*	< 0.007
----------------------------	---------

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.24 (2.45)*

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

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ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-012 / PSD

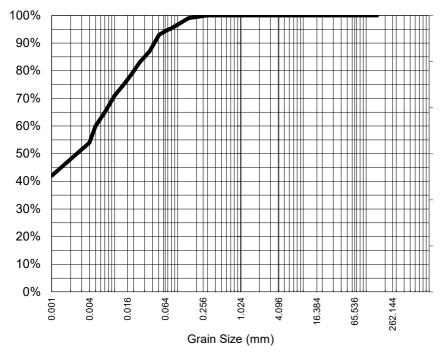
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 16

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

	_
Particle Size (mm)	% Passing
0.300	100%
0.150	99%
0.075	95%
Particle Size (microns)	
51	93%
36	87%
25	83%
19	79%
14	75%
10	71%
7	65%
5	60%
1	42%

Median Particle Size (mm)*	< 0.007
----------------------------	---------

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.3 (2.45)*

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

^{*} Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2435154-013 / PSD

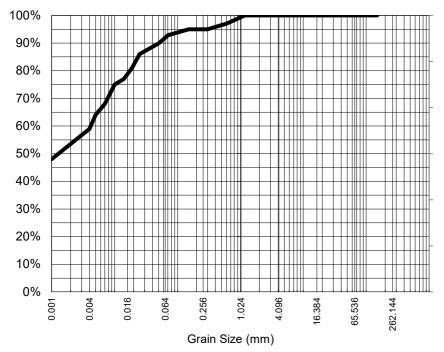
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 M7a

SAP

Particle Size Distribution



Ana	vsis	Notes
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Samples analysed as received.

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Particle Size (mm)	% Passing
1.18	100%
0.600	97%
0.425	96%
0.300	95%
0.150	95%
0.075	93%
Particle Size (microns)	
51	90%
36	88%
25	86%
19	81%
14	77%
10	75%
7	68%
5	64%
1	48%

Median Particle Size (mm)*	< 0.007

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.44 (2.45)*

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

^{*} Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

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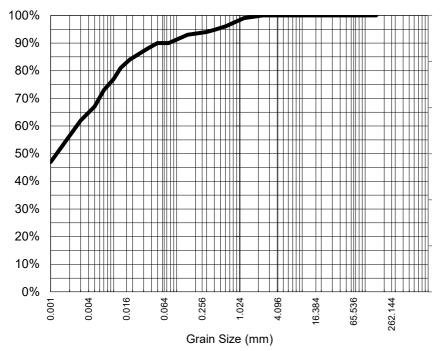
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-014 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 M8

SAP

Particle Size Distribution



Analys	sis N	otes
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Samples analysed as received.

Particle Size (mm)	% Passing
2.36	100%
1.18	99%
0.600	96%
0.425	95%
0.300	94%
0.150	93%
0.075	90%
Particle Size (microns)	
50	90%
35	88%
25	86%
18	84%
13	81%
10	77%
7	73%
5	67%
1	47%

< 0.007 Median Particle Size (mm)*

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.51

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Particle Size (mm)

% Passing

Brisbane QLD

Freddie Pastorelli DATE REPORTED: 24-Oct-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

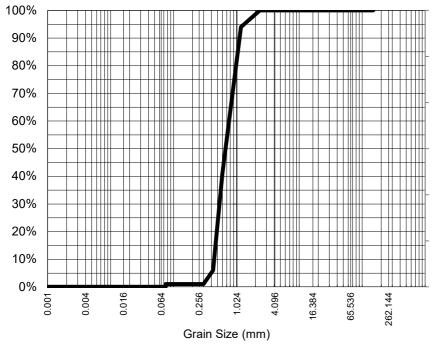
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-015 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 M9

SAP

Particle Size Distribution



Analy	/sis	Notes
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Samples analysed as received.

* Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:** samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

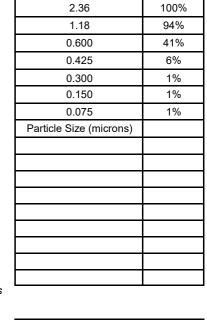
Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.9 (2.85)*

NATA Accreditation: 825 Site: Brisbane

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Modian Particle Size (mm)*	0.608

Analysed: 21-Oct-24

Limit of Reporting: 1%

Dispersion Method Shaker



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Page 1 of 1 Template Version PKV8.0 180919

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental

Brisbane QLD





CLIENT: Freddie Pastorelli DATE REPORTED: 24-Oct-2024

COMPANY: BMT COMMERCIAL DATE RECEIVED: 11-Oct-2024

AUSTRALIA PTY LTD

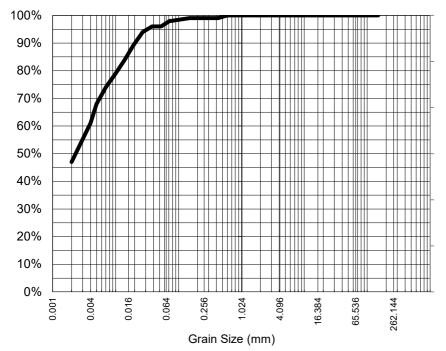
ADDRESS: Po Box 203 **REPORT NO:** EB2435154-016 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: 003344 PoB (Bundaberg) 2024 M7b

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Particle Size (mm)	% Passing
0.600	100%
0.425	99%
0.300	99%
0.150	99%
0.075	98%
Particle Size (microns)	
53	96%
38	96%
27	94%
19	89%
14	84%
10	79%
7	74%
5	68%
2	47%

Median Particle Size (mm)*

Sample Comments: Analysed: 21-Oct-24

Loss on Pretreatment NA **Limit of Reporting: 1%**

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.31 (2.45)*

NATA Accreditation: 825 Site: Brisbane



Satish Trivedi Soil Senior Chemist **Authorised Signatory**

^{*} Soil Particle Density results fell outside the scope of AS 1289.3.6.3. Typical sediment SPD values used for calculations and consequently, NATA endorsement does not apply to hydrometer results



CERTIFICATE OF ANALYSIS

Work Order : **EB2442741**

Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Contact : Freddie Pastorelli

Address : PO BOX 203 SPRING HILL

BRISBANE QLD 4004

Telephone : 07 3831 6744

Project : 003344 PoB (Bundaberg) 2024 SAP

Order number : No PO Provided

C-O-C number : 73984

Sampler : ANGUS WILLIAMS, FELIX REYNOLDS

Site : Offshore Sites

Quote number : EB24BMTWBM0013

No. of samples received : 9
No. of samples analysed : 9

Page : 1 of 19

Laboratory : Environmental Division Brisbane

Contact : Nathan King

Address : 2 Byth Street Stafford QLD Australia 4053

Telephone : +61-7-3552-8685

Date Samples Received : 06-Dec-2024 12:32

Date Analysis Commenced : 10-Dec-2024

Issue Date : 19-Dec-2024 15:09



hy ALS. This document shall

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				
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD				
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD				
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD				
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW				
Kirsty Watson	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD				
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD				
Tatijana Markoska	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD				
Vincent Muller	Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD				

Page : 2 of 19 Work Order : EB2442741

Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

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

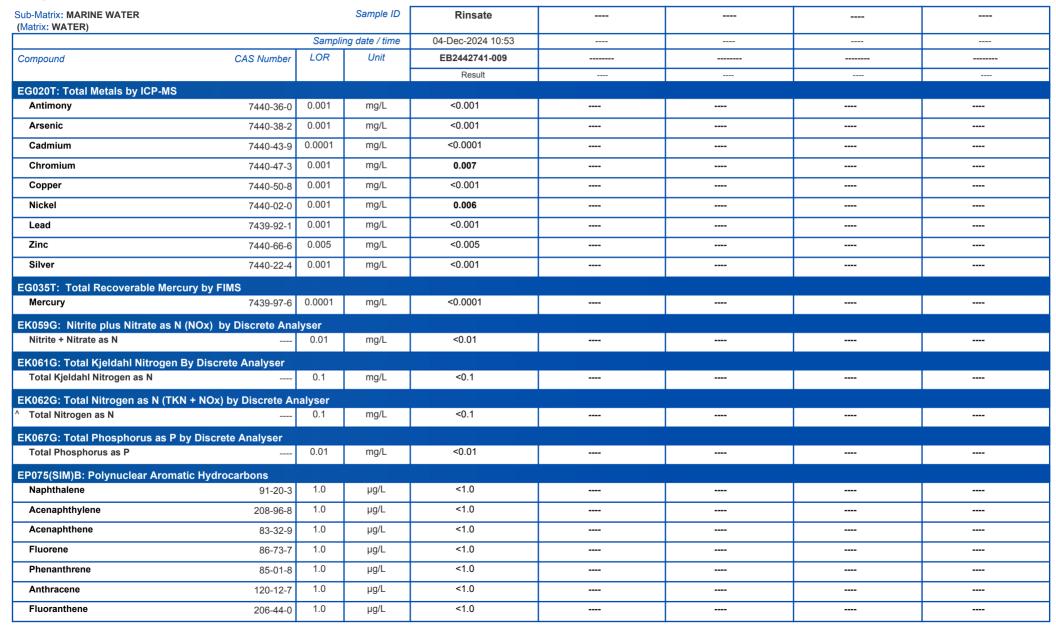
- ^ = This result is computed from individual analyte detections at or above the level of reporting
- ø = ALS is not NATA accredited for these tests.
- ~ = Indicates an estimated value.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total 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(q.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- 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.
- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- Ultra Trace PAH analysis is conducted by ALS Environmental, Sydney, NATA accreditation no. 825, Site No. 10911.
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- EP080 TRH Volatiles/BTEX: Sample EB2442840-004 shows poor matrix spike recovery due to matrix interference.
- EG020T (Total Metals by ICP-MS): The high failing laboratory control standard for Antimony is deemed acceptable as all results are less than the limit of reporting.
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.



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Project : 003344 PoB (Bundaberg) 2024 SAP

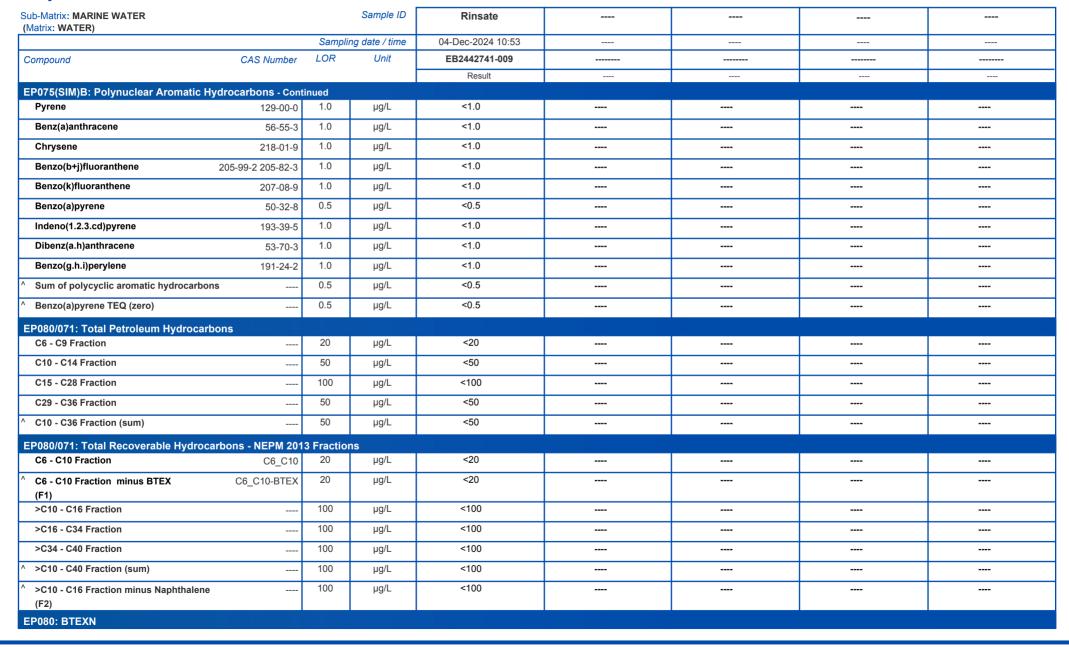




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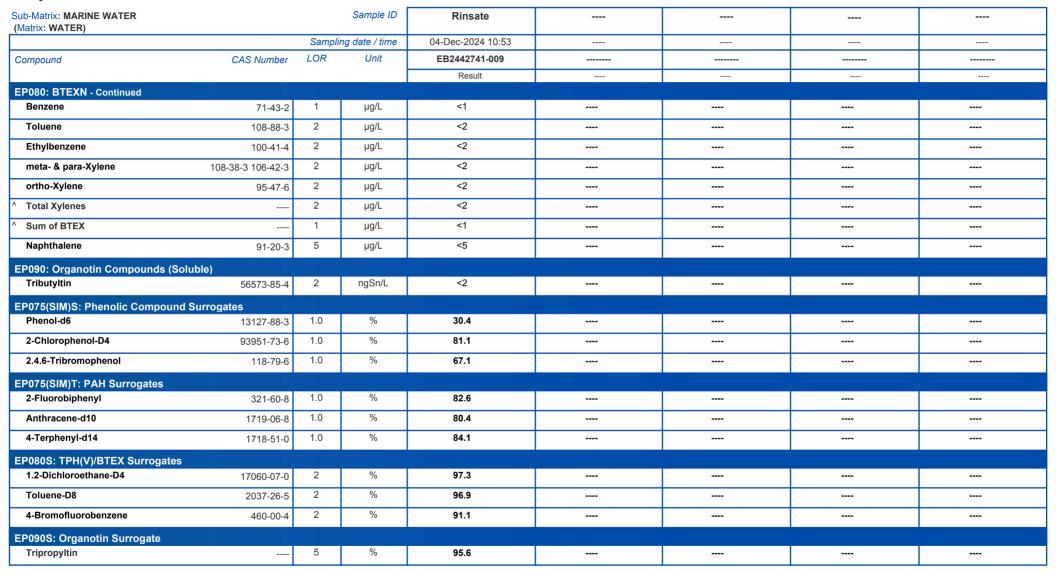




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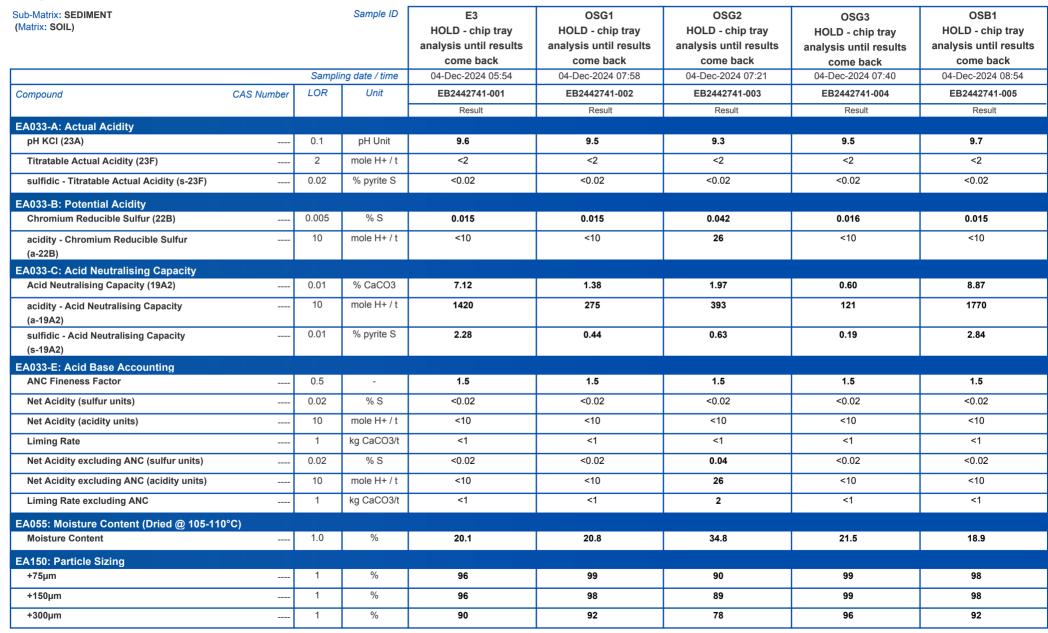




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

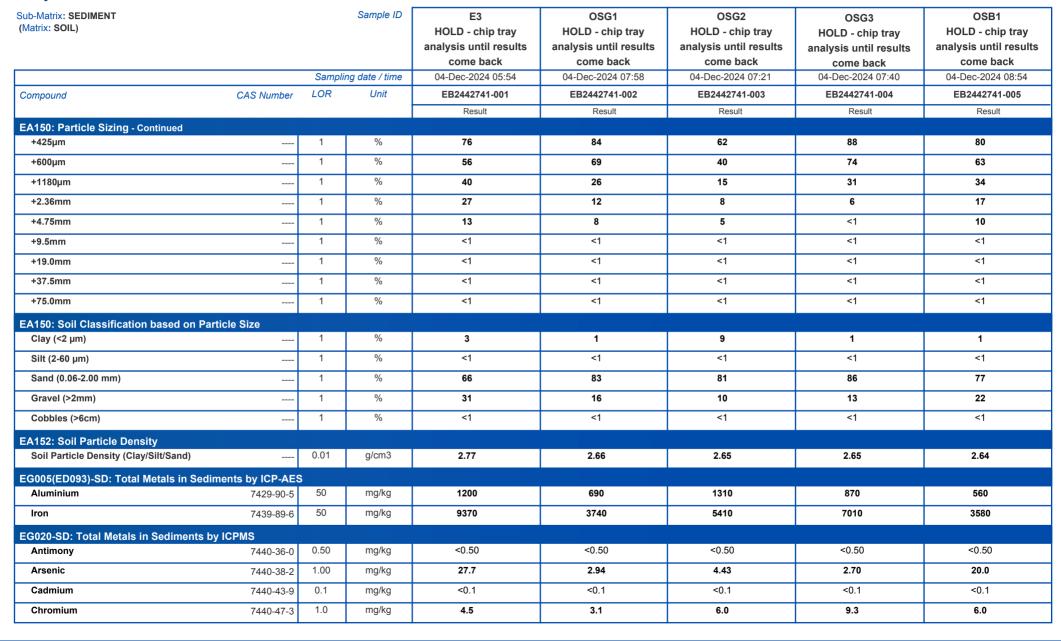




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

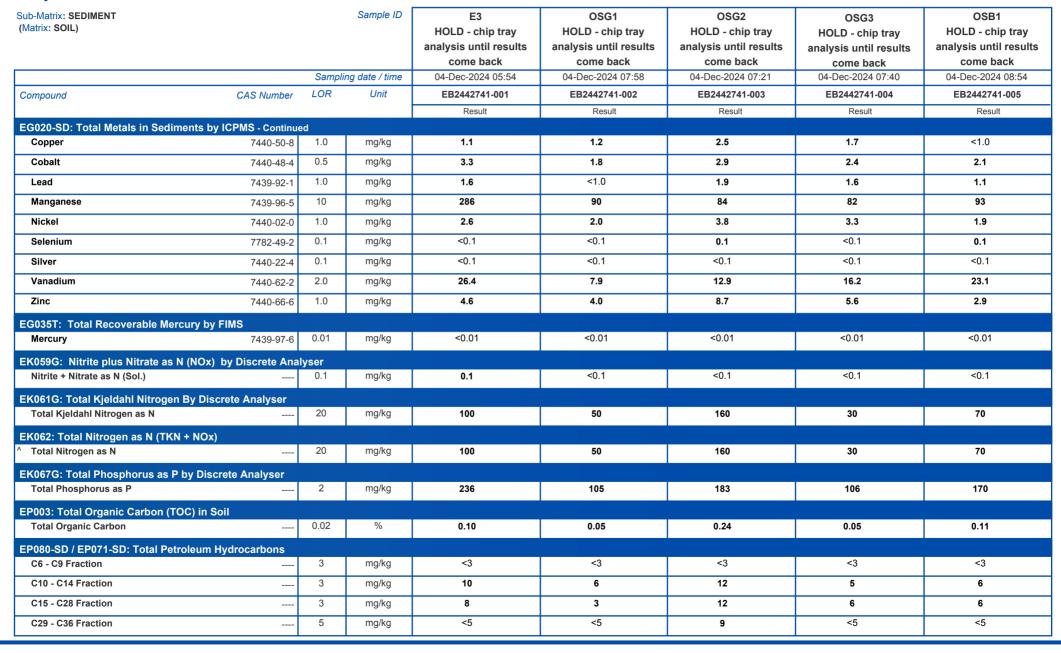




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

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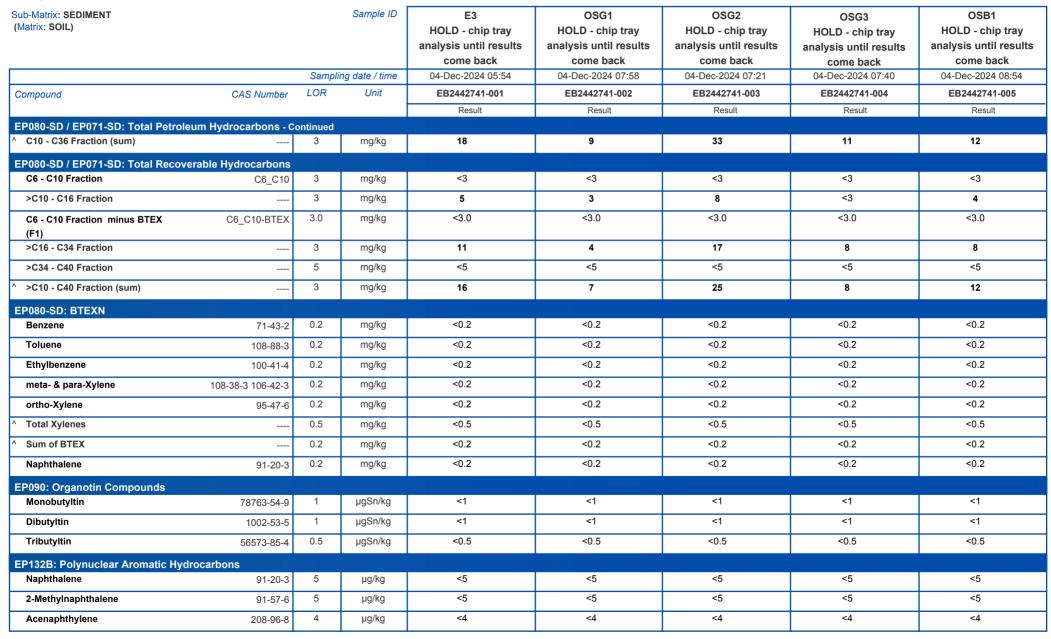




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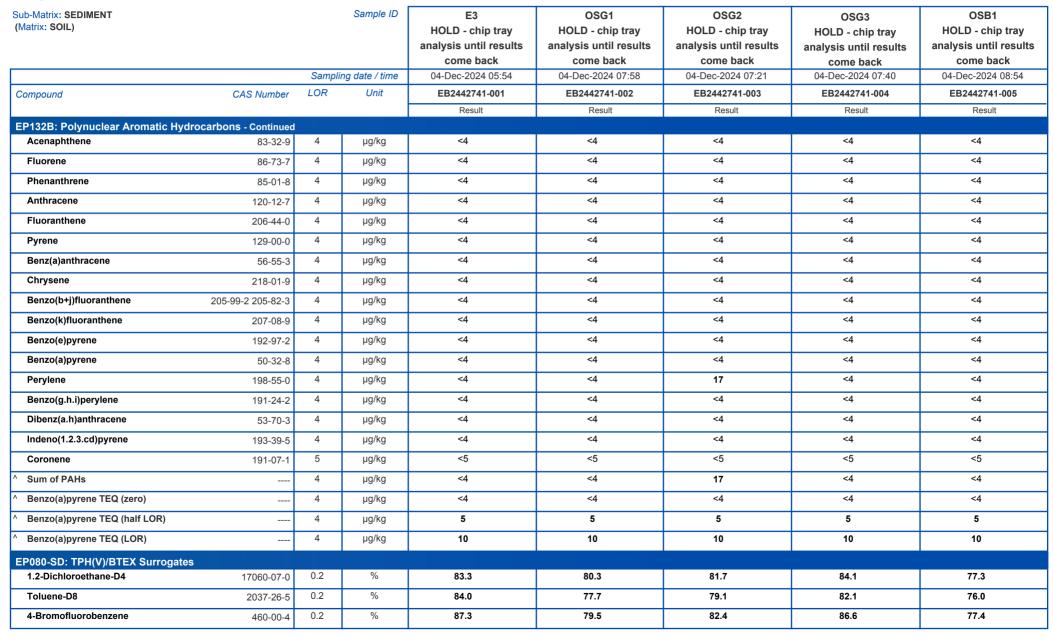




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

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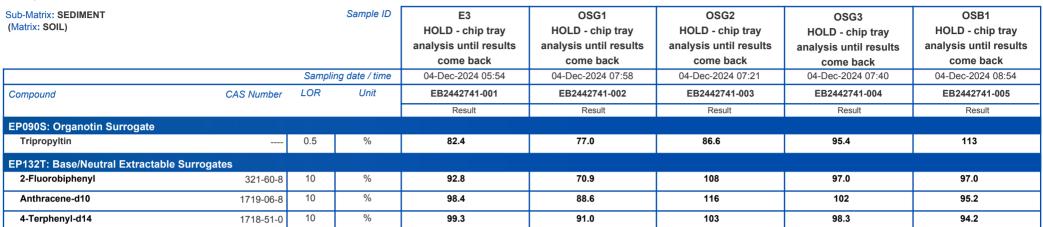




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

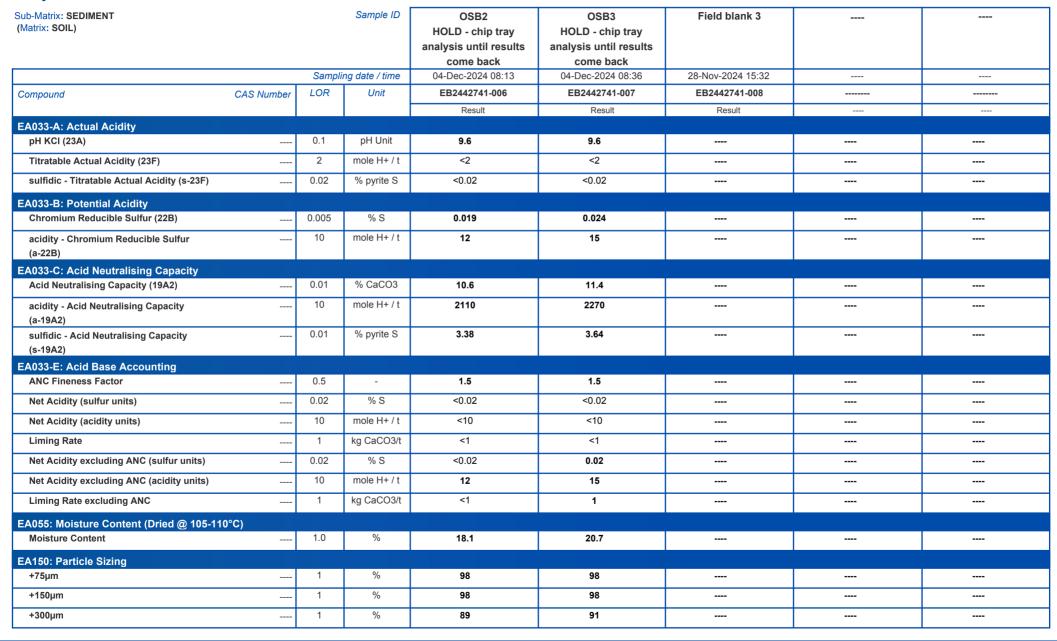




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

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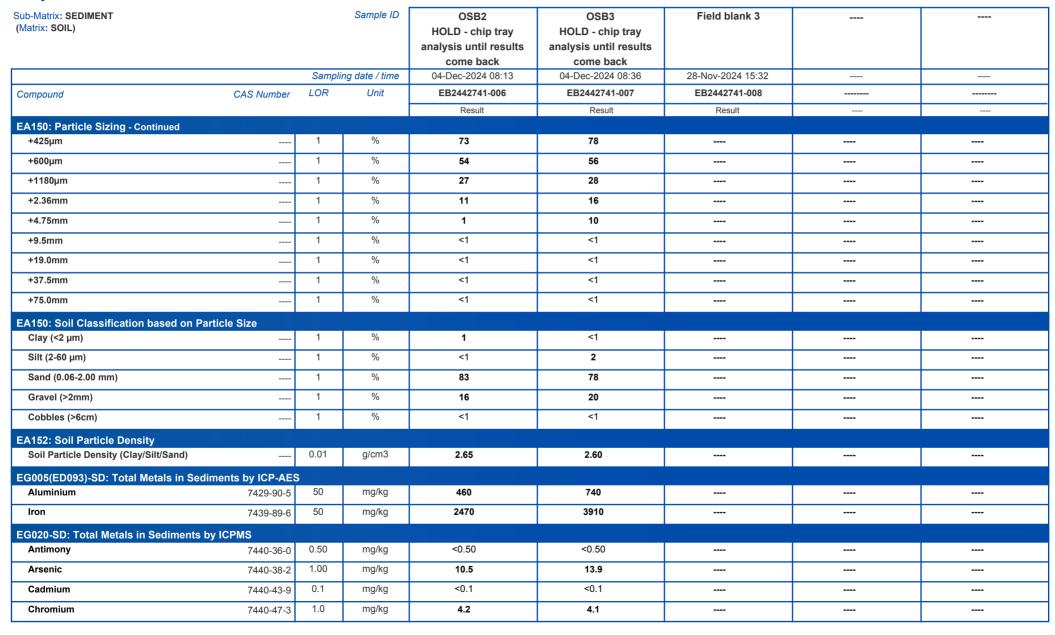




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

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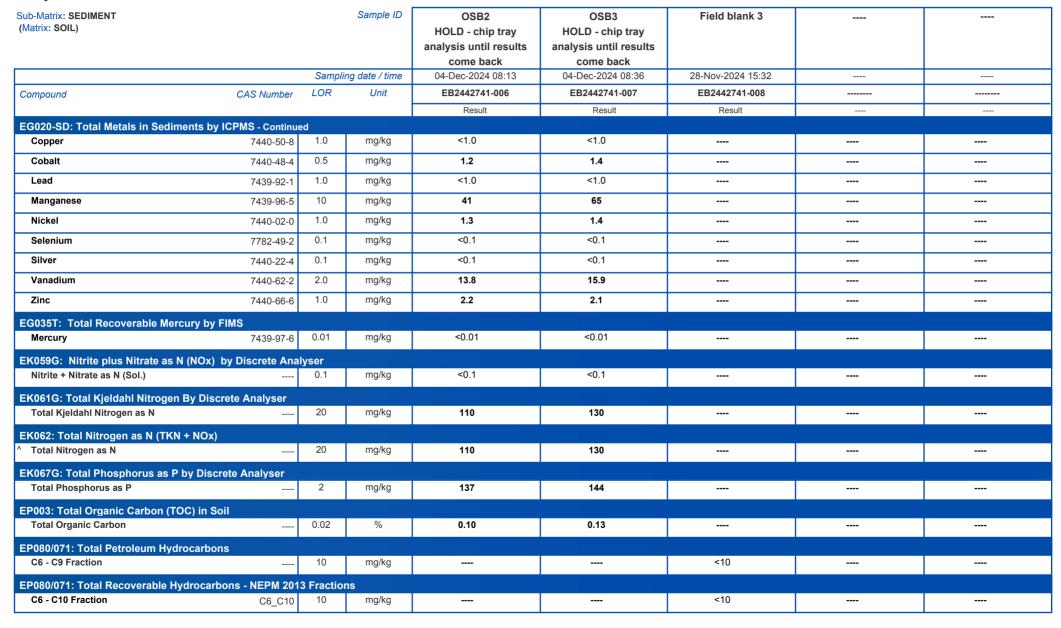




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

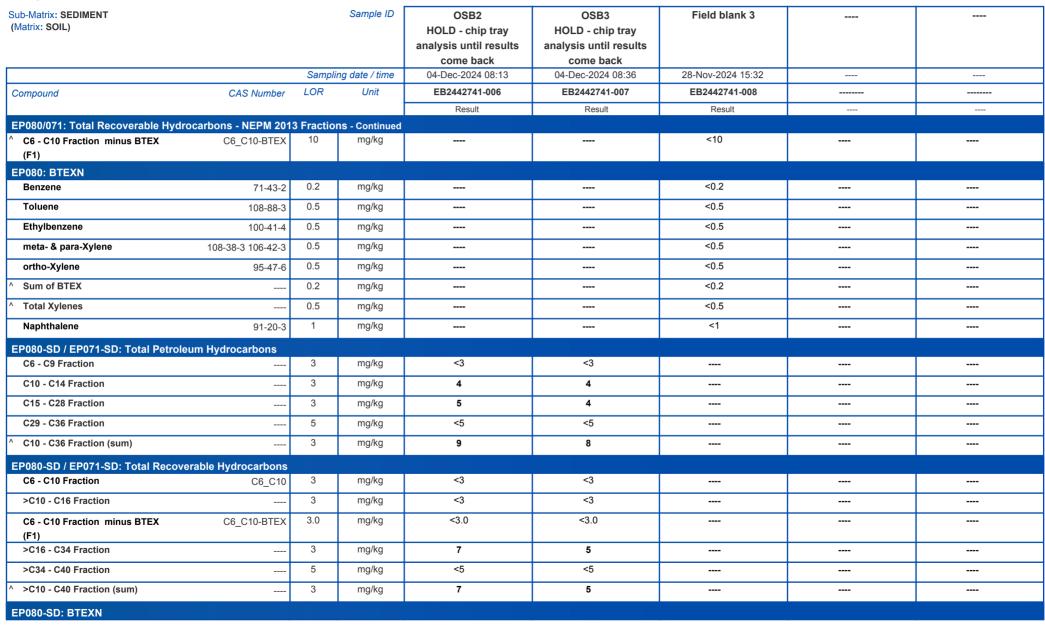




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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

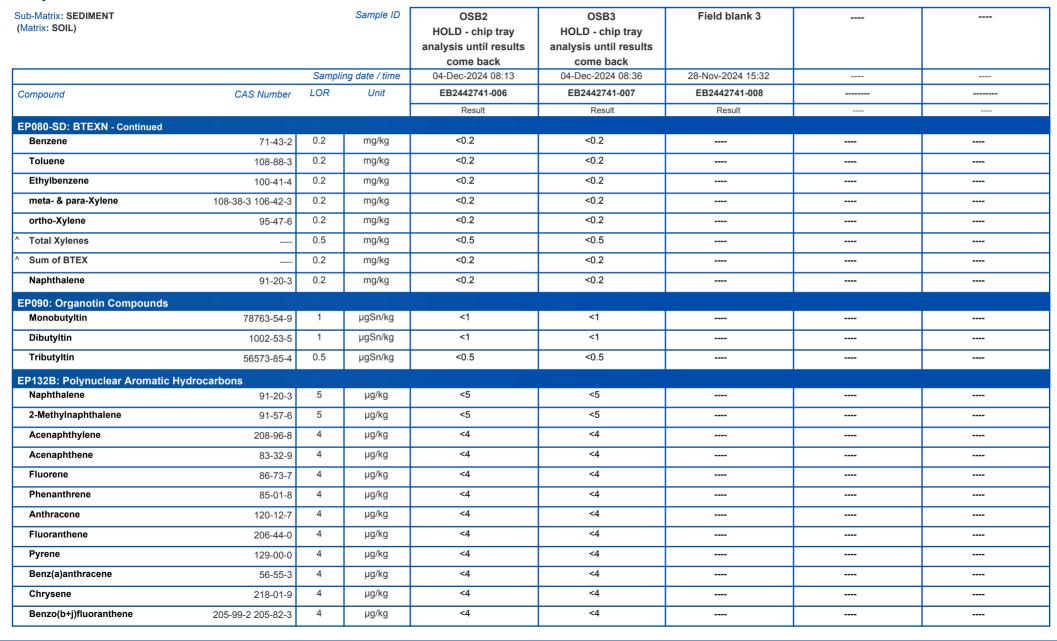
Project : 003344 PoB (Bundaberg) 2024 SAP



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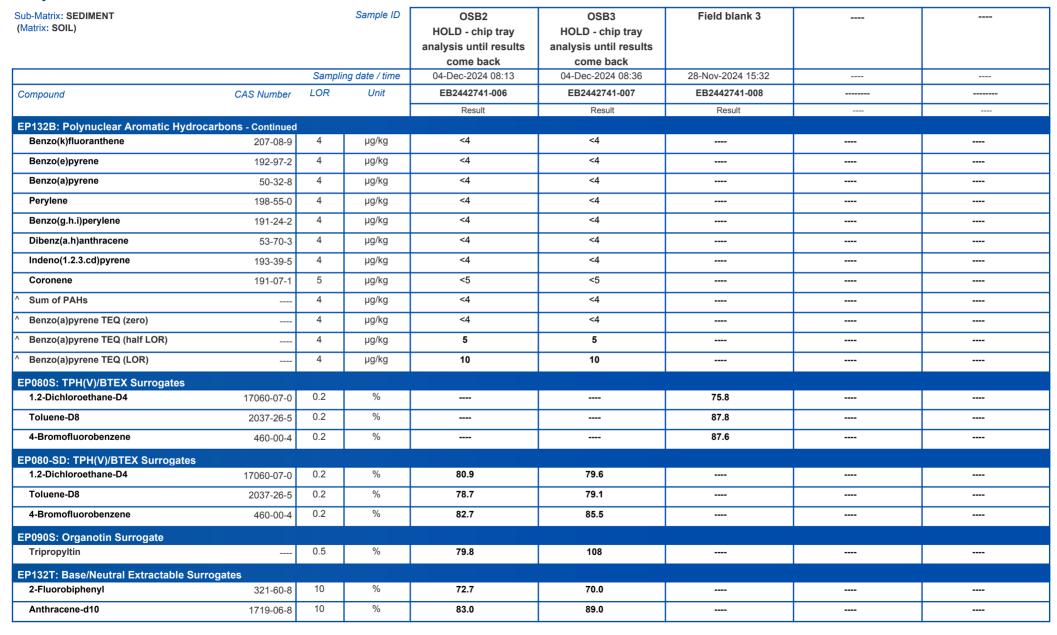




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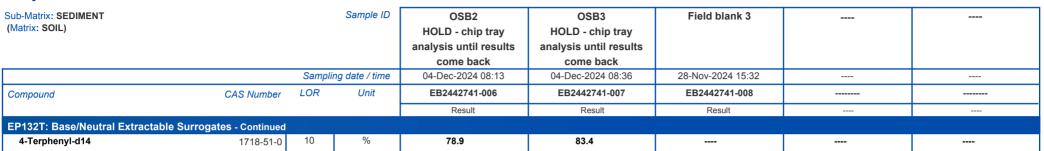




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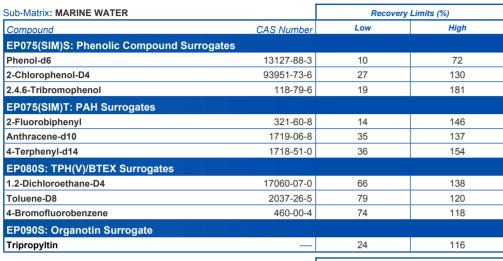


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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP

Surrogate Control Limits



Sub-Matrix: SEDIMENT		Recovery Limits (%)		
Compound	CAS Number	Low	High	
EP080S: TPH(V)/BTEX Surrogates				
1.2-Dichloroethane-D4	17060-07-0	53	134	
Toluene-D8	2037-26-5	60	131	
4-Bromofluorobenzene	460-00-4	59	127	
EP080-SD: TPH(V)/BTEX Surrogates				
1.2-Dichloroethane-D4	17060-07-0	51	145	
Toluene-D8	2037-26-5	42	144	
4-Bromofluorobenzene	460-00-4	58	142	
EP090S: Organotin Surrogate				
Tripropyltin		35	130	
EP132T: Base/Neutral Extractable Surrogates				
2-Fluorobiphenyl	321-60-8	55	135	
Anthracene-d10	1719-06-8	70	136	
4-Terphenyl-d14	1718-51-0	57	127	

Inter-Laboratory Testing

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

(SOIL) EP132B: Polynuclear Aromatic Hydrocarbons (SOIL) EP132T: Base/Neutral Extractable Surrogates





QUALITY CONTROL REPORT

· EB2442741 Work Order Page : 1 of 18

Client : BMT COMMERCIAL AUSTRALIA PTY LTD Laboratory : Environmental Division Brisbane

Contact : Freddie Pastorelli Contact : Nathan King

Address Address : PO BOX 203 SPRING HILL : 2 Byth Street Stafford QLD Australia 4053

BRISBANE QLD 4004

Telephone : 07 3831 6744 Telephone : +61-7-3552-8685

Project : 003344 PoB (Bundaberg) 2024 SAP Date Samples Received : 06-Dec-2024 : 10-Dec-2024

Order number : No PO Provided **Date Analysis Commenced**

C-O-C number · 73984

Sampler : ANGUS WILLIAMS, FELIX REYNOLDS

Site : Offshore Sites Quote number : EB24BMTWBM0013

No. of samples received : 9 No. of samples analysed : 9

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.

Issue Date

· 19-Dec-2024

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
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Soil Preparation, Stafford, QLD
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Kirsty Watson	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Tatijana Markoska	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
Vincent Muller	Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



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			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)-SD:	Total Metals in Sediments by	ICP-AES (QC Lot: 6252951)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EG005-SD: Aluminium	7429-90-5	50	mg/kg	1200	1390	15.3	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	9370	11400	19.4	0% - 20%
EB2443140-026	Anonymous	EG005-SD: Aluminium	7429-90-5	50	mg/kg	12600	11300	11.1	0% - 20%
		EG005-SD: Iron	7439-89-6	50	mg/kg	27700	24200	13.6	0% - 20%
EG035T: Total Rec	overable Mercury by FIMS (L	ow Level) (QC Lot: 6252953)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
EB2443140-026	Anonymous	EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	0.01	0.01	0.0	No Limit
EA033-A: Actual Ac	idity (QC Lot: 6269680)								
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EA033: sulfidic - Titratable Actual Acidity (s-23F)		0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)		2	mole H+ / t	<2	<2	0.0	No Limit
		EA033: pH KCI (23A)		0.1	pH Unit	9.6	9.6	0.0	0% - 20%
EB2442993-004	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)		0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)		2	mole H+ / t	<2	<2	0.0	No Limit
		EA033: pH KCI (23A)		0.1	pH Unit	7.7	7.7	0.0	0% - 20%
EA033-B: Potential	Acidity (QC Lot: 6269680)								

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP



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 (%)
EA033-B: Potential	Acidity (QC Lot: 6269680) -	continued							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EA033: Chromium Reducible Sulfur (22B)		0.005	% S	0.015	0.016	0.0	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)		10	mole H+ / t	<10	10	0.0	No Limit
EB2442993-004	Anonymous	EA033: Chromium Reducible Sulfur (22B)		0.005	% S	0.015	0.017	10.7	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)		10	mole H+ / t	<10	11	0.0	No Limit
EA033-C: Acid Neut	ralising Capacity (QC Lot: 6	5269680)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EA033: Acid Neutralising Capacity (19A2)		0.01	% CaCO3	7.12	7.30	2.6	0% - 20%
		EA033: sulfidic - Acid Neutralising Capacity (s-19A2)		0.01	% pyrite S	2.28	2.34	2.6	0% - 20%
		EA033: acidity - Acid Neutralising Capacity (a-19A2)		10	mole H+ / t	1420	1460	2.6	0% - 20%
EB2442993-004	Anonymous	EA033: Acid Neutralising Capacity (19A2)		0.01	% CaCO3	1.48	1.54	4.1	0% - 20%
		EA033: sulfidic - Acid Neutralising Capacity (s-19A2)		0.01	% pyrite S	0.47	0.49	4.1	0% - 20%
		EA033: acidity - Acid Neutralising Capacity (a-19A2)		10	mole H+ / t	296	308	4.1	0% - 20%
EA055: Moisture Co	ontent (Dried @ 105-110°C) (QC Lot: 6246534)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EA055: Moisture Content		0.1 (1.0)*	%	20.1	18.6	7.5	0% - 20%
EG020-SD: Total Me	etals in Sediments by ICPMS	(QC Lot: 6252952)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Selenium	7782-49-2	0.1	mg/kg	<0.1	0.1	0.0	No Limit
		EG020-SD: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit
		EG020-SD: Cobalt	7440-48-4	0.5	mg/kg	3.3	3.8	13.2	No Limit
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	27.7	31.8	13.8	0% - 20%
		EG020-SD: Chromium	7440-47-3	1	mg/kg	4.5	5.1	11.5	No Limit
		EG020-SD: Copper	7440-50-8	1	mg/kg	1.1	1.3	13.8	No Limit
		EG020-SD: Lead	7439-92-1	1	mg/kg	1.6	1.8	13.4	No Limit
		EG020-SD: Nickel	7440-02-0	1	mg/kg	2.6	3.0	12.9	No Limit
		EG020-SD: Zinc	7440-66-6	1	mg/kg	4.6	5.2	13.3	No Limit

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP



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 Me	etals in Sediments by ICPMS	(QC Lot: 6252952) - continued									
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EG020-SD: Manganese	7439-96-5	10	mg/kg	286	312	8.5	0% - 20%		
		EG020-SD: Vanadium	7440-62-2	2	mg/kg	26.4	30.5	14.5	0% - 50%		
EB2443140-026	Anonymous	EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit		
		EG020-SD: Selenium	7782-49-2	0.1	mg/kg	0.4	0.4	0.0	No Limit		
		EG020-SD: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0	No Limit		
		EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50	<0.50	0.0	No Limit		
		EG020-SD: Cobalt	7440-48-4	0.5	mg/kg	10.1	9.9	1.9	0% - 20%		
		EG020-SD: Arsenic	7440-38-2	1	mg/kg	7.07	7.02	0.7	No Limit		
		EG020-SD: Chromium	7440-47-3	1	mg/kg	28.1	28.1	0.0	0% - 20%		
		EG020-SD: Copper	7440-50-8	1	mg/kg	7.5	7.2	3.9	No Limit		
		EG020-SD: Lead	7439-92-1	1	mg/kg	6.8	6.7	1.6	No Limit		
		EG020-SD: Nickel	7440-02-0	1	mg/kg	15.7	15.6	0.0	0% - 50%		
		EG020-SD: Zinc	7440-66-6	1	mg/kg	35.9	35.3	1.8	0% - 20%		
		EG020-SD: Manganese	7439-96-5	10	mg/kg	221	218	1.3	0% - 20%		
		EG020-SD: Vanadium	7440-62-2	2	mg/kg	28.6	28.1	1.9	0% - 50%		
EK059G: Nitrite plu	us Nitrate as N (NOx) by Disc	crete Analyser (QC Lot: 6246504)									
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EK059G: Nitrite + Nitrate as N (Sol.)		0.1	mg/kg	0.1	0.1	0.0	No Limit		
EB2442919-028	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)		0.1	mg/kg	<0.1	<0.1	0.0	No Limit		
K061G: Total Kjelo	dahl Nitrogen By Discrete An	palyser (QC Lot: 6250052)									
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		20	mg/kg	100	130	17.9	No Limit		
EB2442919-051	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		20	mg/kg	780	780	0.0	0% - 20%		
EK061G: Total Kjeld	dahl Nitrogen By Discrete An	nalyser (QC Lot: 6256657)									
EB2442741-005	OSB1 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		20	mg/kg	70	80	20.0	No Limit		
EB2443140-031	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		20	mg/kg	1040	1000	3.3	0% - 20%		
K067G: Total Pho	sphorus as P by Discrete An	alyser (QC Lot: 6250051)									
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		2	mg/kg	236	276	15.4	0% - 20%		
EB2442919-051	Anonymous	EK067G: Total Phosphorus as P		2	mg/kg	568	576	1.4	0% - 20%		

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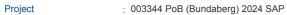
Client : BMT COMMERCIAL AUSTRALIA PTY LTD



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 (%)	
EK067G: Total Phos	phorus as P by Discrete Ana	lyser (QC Lot: 6256656) - continued	İ							
EB2442741-005	OSB1 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		2	mg/kg	170	155	9.5	0% - 20%	
EB2443140-031	Anonymous	EK067G: Total Phosphorus as P		2	mg/kg	579	528	9.2	0% - 20%	
EP003: Total Organi	c Carbon (TOC) in Soil (QC I	_ot: 6265579)								
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP003: Total Organic Carbon		0.02	%	0.10	0.09	16.8	No Limit	
EB2443140-023	Anonymous	EP003: Total Organic Carbon		0.02	%	0.92	0.95	3.1	0% - 20%	
EP080/071: Total Pet	troleum Hydrocarbons (QC I	_ot: 6246465)								
EB2442741-008	Field blank 3	EP080: C6 - C9 Fraction		10	mg/kg	<10	<10	0.0	No Limit	
EB2443030-006	Anonymous	EP080: C6 - C9 Fraction		10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Re	coverable Hydrocarbons - NI	EPM 2013 Fractions (QC Lot: 6246465)								
EB2442741-008	Field blank 3	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EB2443030-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080: BTEXN (QC	Lot: 6246465)									
EB2442741-008	Field blank 3	EP080: Benzene EP080: Toluene EP080: Ethylbenzene	71-43-2 108-88-3 100-41-4	0.2 0.5 0.5	mg/kg mg/kg mg/kg	<0.2 <0.5 <0.5	<0.2 <0.5 <0.5	0.0 0.0 0.0	No Limit No Limit No Limit	
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
EB2443030-006	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Ethylbenzene EP080: meta- & para-Xylene	100-41-4 108-38-3 106-42-3	0.5	mg/kg mg/kg	<0.5 <0.5	<0.5 <0.5	0.0	No Limit No Limit	
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
EP080-SD / EP071-S	D: Total Petroleum Hydrocar	bons (QC Lot: 6246466)								
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C9 Fraction		3	mg/kg	<3	<3	0.0	No Limit	
	D: Total Petroleum Hydrocar	bons (QC Lot: 6257191)								
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP071-SD-SV: C10 - C14 Fraction		3 (4)*	mg/kg	10	11	9.7	No Limit	

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD





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-S	D: Total Petroleum Hydroca	rbons (QC Lot: 6257191) - continued							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP071-SD-SV: C15 - C28 Fraction		3 (7)*	mg/kg	8	10	16.3	No Limit
		EP071-SD-SV: C10 - C36 Fraction (sum)		3 (7)*	mg/kg	18	21	15.4	No Limit
		EP071-SD-SV: C29 - C36 Fraction		5 (7)*	mg/kg	<5	<7	34.6	No Limit
EB2443073-009	Anonymous	EP071-SD-SV: C10 - C14 Fraction		3 (7)*	mg/kg	7	9	23.7	No Limit
		EP071-SD-SV: C15 - C28 Fraction		3 (14)*	mg/kg	18	26	35.1	No Limit
		EP071-SD-SV: C10 - C36 Fraction (sum)		3 (14)*	mg/kg	40	61	41.6	No Limit
		EP071-SD-SV: C29 - C36 Fraction		5 (14)*	mg/kg	15	26	50.1	No Limit
EP080-SD / EP071-S	D: Total Recoverable Hydro	carbons (QC Lot: 6246466)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	<3	0.0	No Limit
EP080-SD / EP071-S	SD: Total Recoverable Hydro	carbons (QC Lot: 6257191)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP071-SD-SV: >C10 - C16 Fraction		3 (7)*	mg/kg	5	<7	37.8	No Limit
		EP071-SD-SV: >C16 - C34 Fraction		3 (7)*	mg/kg	11	12	13.9	No Limit
		EP071-SD-SV: >C10 - C40 Fraction (sum)		3 (7)*	mg/kg	16	12	28.6	No Limit
		EP071-SD-SV: >C34 - C40 Fraction		5 (7)*	mg/kg	<5	<7	34.6	No Limit
EB2443073-009	Anonymous	EP071-SD-SV: >C10 - C16 Fraction		3 (14)*	mg/kg	6	<14	79.5	No Limit
		EP071-SD-SV: >C16 - C34 Fraction		3 (14)*	mg/kg	28	44	42.5	No Limit
		EP071-SD-SV: >C10 - C40 Fraction (sum)		3 (14)*	mg/kg	41	59	36.0	No Limit
		EP071-SD-SV: >C34 - C40 Fraction		5 (14)*	mg/kg	7	15	67.7	No Limit
EP080-SD: BTEXN ((QC Lot: 6246466)								
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080-SD: Total Xylenes		0.2 (0.5)*	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080-SD: Naphthalene	91-20-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP090: Organotin C	ompounds (QC Lot: 626193	5)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP090: Tributyltin	56573-85-4	0.5	μgSn/kg	<0.5	<0.5	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 (%)
EP090: Organotin C	ompounds (QC Lot: 626193	5) - continued							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP090: Monobutyltin	78763-54-9	1	μgSn/kg	<1	<1	0.0	No Limit
		EP090: Dibutyltin	1002-53-5	1	μgSn/kg	<1	<1	0.0	No Limit
EP132B: Polynuclea	ar Aromatic Hydrocarbons (QC Lot: 6248693)							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP132B-SD: Acenaphthylene	208-96-8	4	µg/kg	<4	<4	0.0	No Limit
	buok	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	205-99-2 205-82-3	4	μg/kg	<4	<4	0.0	No Limit
		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
		EP132B-SD: Coronene	191-07-1	5	μg/kg	<5	<5	0.0	No Limit
EB2442919-046	Anonymous	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

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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 (%)	
EP132B: Polynuclea	ar Aromatic Hydrocai	rbons (QC Lot: 6248693) - continued								
EB2442919-046	Anonymous	EP132B-SD: Benzo(b+j)fluoranthene	205-99-2 205-82-3	4	μg/kg	<4	<4	0.0	No Limit	
		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	9	10	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	9	14	43.5	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	
		EP132B-SD: Coronene	191-07-1	5	μg/kg	<5	<5	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 (%)	
EG020T: Total Meta	Is by ICP-MS (QC Lo	ot: 6250538)								
EB2443074-007	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-T: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.003	0.0	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit	
EB2443157-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.0	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.074	0.075	0.0	0% - 20%	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.524	0.533	1.7	0% - 20%	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.013	0.013	0.0	0% - 50%	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.251	0.255	1.4	0% - 20%	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.502	0.508	1.1	0% - 20%	
EG020T: Total Meta	Is by ICP-MS (QC Lo	ot: 6250540)								
EB2443074-007	Anonymous	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
EB2443157-003	Anonymous	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
EG035T: Total Reco	overable Mercury by	FIMS (QC Lot: 6251194)								
EB2442741-009	Rinsate	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
ET2406708-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
	1	The state of the s			1	1	1		1	

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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 (%)	
EK059G: Nitrite pl	us Nitrate as N (NOx)	by Discrete Analyser (QC Lot: 6248000)								
EB2442858-008	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	0.0	No Limit	
EB2441194-011	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	0.34	0.33	0.0	0% - 20%	
EK061G: Total Kjel	dahl Nitrogen By Dis	crete Analyser (QC Lot: 6266832)								
EB2440821-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	188	191	1.7	0% - 20%	
EB2443237-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	20.1	19.0	5.8	0% - 20%	
EK067G: Total Pho	sphorus as P by Disc	crete Analyser (QC Lot: 6266833)								
EB2440821-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	47.6	47.9	0.6	0% - 20%	
EB2443237-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.10	0.09	16.2	0% - 50%	
EP080/071: Total P	etroleum Hydrocarbo	ons (QC Lot: 6260169)								
EB2441631-027	Anonymous	EP080: C6 - C9 Fraction		20	μg/L	<20	<20	0.0	No Limit	
EB2443033-002	Anonymous	EP080: C6 - C9 Fraction		20	μg/L	<20	<20	0.0	No Limit	
EP080/071: Total R	ecoverable Hydrocar	bons - NEPM 2013 Fractions (QC Lot: 6260169)								
EB2441631-027	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	μg/L	<20	<20	0.0	No Limit	
EB2443033-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	μg/L	<20	<20	0.0	No Limit	
EP080: BTEXN (Q	C Lot: 6260169)									
EB2441631-027	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	2	μg/L	<2	<2	0.0	No Limit	
			106-42-3			_	_			
		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	
EB2443033-002	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	
EP090: Organotin	Compounds (Soluble)	·	3.200		r3			0.0		
EP2418243-006	Anonymous	EP090S: Tributyltin	56573-85-4	2	ngSn/L	<2	<2	0.0	No Limit	
L. 2710270-000	/ wionymous	Erusus. Hibutyitiii	3037 3-03-4		ngon/L	\ <u>^</u>		0.0	140 LIIIII	

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP



Method Blank (MB) and Laboratory Control Sample (LCS) Report

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.

ub-Matrix: SOIL				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC	CLot: 62529	51)							
EG005-SD: Aluminium	7429-90-5	50	mg/kg	<50	6935 mg/kg	104	70.0	130	
EG005-SD: Iron	7439-89-6	50	mg/kg	<50	23400 mg/kg	99.1	70.0	130	
EG035T: Total Recoverable Mercury by FIMS (Low Level) (Q0	CLot: 62529	53)							
EG035T-LL: Mercury	7439-97-6	0.01	mg/kg	<0.01	0.087 mg/kg	114	70.0	130	
EA033-A: Actual Acidity (QCLot: 6269680)									
EA033: pH KCl (23A)			pH Unit		4.7 pH Unit	100	80.0	120	
EA033: Titratable Actual Acidity (23F)		2	mole H+ / t	<2	23.5 mole H+ / t	104	80.0	120	
EA033: sulfidic - Titratable Actual Acidity (s-23F)		0.02	% pyrite S	<0.02					
EA033-B: Potential Acidity (QCLot: 6269680)									
EA033: Chromium Reducible Sulfur (22B)		0.005	% S	<0.005	0.283 % S	102	77.0	121	
EA033: acidity - Chromium Reducible Sulfur (a-22B)		10	mole H+ / t	<10					
EA033-C: Acid Neutralising Capacity (QCLot: 6269680)									
EA033: Acid Neutralising Capacity (19A2)		0.01	% CaCO3	<0.01	10 % CaCO3	103	91.0	112	
EA033: acidity - Acid Neutralising Capacity (a-19A2)		10	mole H+ / t	<10					
EA033: sulfidic - Acid Neutralising Capacity (s-19A2)		0.01	% pyrite S	<0.01					
EA152: Soil Particle Density (QCLot: 6246549)									
EA152: Soil Particle Density (Clay/Silt/Sand)			g/cm3		2.68 g/cm3	101	80.0	120	
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6252	952)								
EG020-SD: Antimony	7440-36-0	0.5	mg/kg	<0.50					
EG020-SD: Arsenic	7440-38-2	1	mg/kg	<1.00	33.25 mg/kg	99.1	80.0	124	
EG020-SD: Cadmium	7440-43-9	0.1	mg/kg	<0.1	0.95 mg/kg	106	87.0	122	
EG020-SD: Chromium	7440-47-3	1	mg/kg	<1.0	25.5 mg/kg	121	79.0	129	
EG020-SD: Copper	7440-50-8	1	mg/kg	<1.0	103.55 mg/kg	104	85.0	118	
EG020-SD: Cobalt	7440-48-4	0.5	mg/kg	<0.5	10.1 mg/kg	109	70.0	130	
EG020-SD: Lead	7439-92-1	1	mg/kg	<1.0	121 mg/kg	108	86.0	119	
EG020-SD: Manganese	7439-96-5	10	mg/kg	<10	461.5 mg/kg	106	70.0	130	
EG020-SD: Nickel	7440-02-0	1	mg/kg	<1.0	30.05 mg/kg	112	77.0	123	
EG020-SD: Selenium	7782-49-2	0.1	mg/kg	<0.1					
EG020-SD: Silver	7440-22-4	0.1	mg/kg	<0.1	0.55 mg/kg	104	70.0	130	
EG020-SD: Vanadium	7440-62-2	2	mg/kg	<2.0	23.5 mg/kg	106	70.0	130	

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Sub-Matrix: SOIL			Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 6252952) - con							
EG020-SD: Zinc 7440-66-6	1	mg/kg	<1.0	209 mg/kg	105	71.0	127
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6	246504)						
EK059G: Nitrite + Nitrate as N (Sol.)	0.1	mg/kg	<0.1	2.5 mg/kg	97.0	83.2	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6250052)						
EK061G: Total Kjeldahl Nitrogen as N	20	mg/kg	<20	306 mg/kg	89.8	70.0	130
			<20	2300 mg/kg	95.6	88.0	112
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6256657)						
EK061G: Total Kjeldahl Nitrogen as N	20	mg/kg	<20	306 mg/kg	112	70.0	130
			<20	2300 mg/kg	102	88.0	112
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6250051)							
EK067G: Total Phosphorus as P	2	mg/kg	<2	142 mg/kg	119	70.0	130
			<2	567 mg/kg	100	88.0	112
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6256656)							
EK067G: Total Phosphorus as P	2	mg/kg	<2	142 mg/kg	125	70.0	130
·			<2	567 mg/kg	100.0	88.0	112
EP003: Total Organic Carbon (TOC) in Soil (QCLot: 6265579)							
EP003: Total Organic Carbon	0.02	%	<0.02	0.55 %	98.2	80.0	120
, and the second			<0.02	32.3 %	98.2	80.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6246465)							
EP080: C6 - C9 Fraction	10	mg/kg	<10	18 mg/kg	82.4	64.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (Q	CL ot: 6246465)						
EP080: C6 - C10 Fraction C6_C10	10	mg/kg	<10	22.5 mg/kg	82.4	58.1	124
EP080: BTEXN (QCLot: 6246465)					02		
EP080: Benzene 71-43-2	0.2	mg/kg	<0.2	1 mg/kg	81.5	68.0	107
EP080: Toluene 108-88-3	0.5	mg/kg	<0.5	1 mg/kg	80.8	69.0	108
EP080: Ethylbenzene 100-41-4	0.5	mg/kg	<0.5	1 mg/kg	82.9	68.0	109
EP080: meta- & para-Xylene 108-38-3	0.5	mg/kg	<0.5	2 mg/kg	86.1	70.0	114
106-42-3					00.1		117
EP080: ortho-Xylene 95-47-6	0.5	mg/kg	<0.5	1 mg/kg	84.7	74.0	116
EP080: Naphthalene 91-20-3	1	mg/kg	<1	1 mg/kg	87.4	74.0	109
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6246466)							
EP080-SD: C6 - C9 Fraction	3	mg/kg	<3	18 mg/kg	86.5	66.0	120
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 6257191)							
EP071-SD-SV: C10 - C14 Fraction	3	mg/kg	<4	189 mg/kg	105	43.0	126
	1				1		

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Sub-Matrix: SOIL				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons	(QCLot: 6257191)	- continued							
EP071-SD-SV: C15 - C28 Fraction		3	mg/kg	<8	203 mg/kg	107	66.0	140	
EP071-SD-SV: C29 - C36 Fraction		5	mg/kg	<8					
EP071-SD-SV: C10 - C36 Fraction (sum)		3	mg/kg	<8					
EP080-SD / EP071-SD: Total Recoverable Hydrocarbo	ns (QCLot: 6246466)							
EP080-SD: C6 - C10 Fraction	C6_C10	3	mg/kg	<3	22.5 mg/kg	86.8	66.0	119	
EP080-SD / EP071-SD: Total Recoverable Hydrocarbo	ns (QCLot: 6257191)							
EP071-SD-SV: >C10 - C16 Fraction		3	mg/kg	<8	251 mg/kg	105	40.0	134	
EP071-SD-SV: >C16 - C34 Fraction		3	mg/kg	<8	133 mg/kg	109	66.0	136	
EP071-SD-SV: >C34 - C40 Fraction		5	mg/kg	<8					
EP071-SD-SV: >C10 - C40 Fraction (sum)		3	mg/kg	<8					
EP080-SD: BTEXN (QCLot: 6246466)	11 3								
EP080-SD: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	88.3	73.0	105	
EP080-SD: Toluene	108-88-3	0.2	mg/kg	<0.2	1 mg/kg	84.5	73.0	105	
EP080-SD: Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	1 mg/kg	88.6	67.0	104	
EP080-SD: meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	2 mg/kg	90.6	66.0	106	
EP080-SD: ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	1 mg/kg	91.4	68.0	105	
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	1 mg/kg	88.1	72.0	115	
EP090: Organotin Compounds (QCLot: 6261935)	11 11								
EP090: Monobutyltin	78763-54-9	1	μgSn/kg	<1	1.25 μgSn/kg	93.4	36.0	128	
EP090: Dibutyltin	1002-53-5	1	μgSn/kg	<1	1.25 μgSn/kg	119	42.0	132	
EP090: Tributyltin	56573-85-4	0.5	μgSn/kg	<0.5	1.25 μgSn/kg	101	52.0	139	
EP132B: Polynuclear Aromatic Hydrocarbons (QCLo	t: 6248693)								
EP132B-SD: Naphthalene	91-20-3	5	μg/kg	<5	25 μg/kg	95.6	63.0	129	
EP132B-SD: 2-Methylnaphthalene	91-57-6	5	μg/kg	<5	25 μg/kg	93.0	64.0	128	
EP132B-SD: Acenaphthylene	208-96-8	4	μg/kg	<4	25 μg/kg	90.0	65.0	129	
EP132B-SD: Acenaphthene	83-32-9	4	μg/kg	<4	25 μg/kg	90.1	68.0	132	
EP132B-SD: Fluorene	86-73-7	4	μg/kg	<4	25 μg/kg	84.2	68.0	124	
EP132B-SD: Phenanthrene	85-01-8	4	μg/kg	<4	25 μg/kg	94.8	64.0	134	
EP132B-SD: Anthracene	120-12-7	4	μg/kg	<4	25 μg/kg	97.6	65.0	131	
EP132B-SD: Fluoranthene	206-44-0	4	μg/kg	<4	25 μg/kg	91.3	64.0	130	
EP132B-SD: Pyrene	129-00-0	4	μg/kg	<4	25 μg/kg	91.2	67.0	133	

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Sub-Matrix: SOIL	Γ		Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 6248693) - cont	inued						
EP132B-SD: Benz(a)anthracene 56-55-3	4	μg/kg	<4	25 μg/kg	93.2	62.0	130
EP132B-SD: Chrysene 218-01-9	4	μg/kg	<4	25 μg/kg	89.8	65.0	133
EP132B-SD: Benzo(b+j)fluoranthene 205-99-2	4	μg/kg	<4	25 μg/kg	90.7	68.0	120
205-82-3 EP132B-SD: Benzo(k)fluoranthene 207-08-9	4	μg/kg	<4	25 μg/kg	89.3	61.0	133
EP132B-SD: Benzo(e)pyrene 192-97-2	4	μg/kg	<4	25 μg/kg	87.8	63.0	127
EP132B-SD: Benzo(a)pyrene 50-32-8	4	μg/kg	<4	25 μg/kg	86.8	66.0	118
EP132B-SD: Perylene 198-55-0	4	μg/kg	<4	25 μg/kg	88.0	69.0	119
EP132B-SD: Benzo(g.h.i)perylene 191-24-2	4	μg/kg	<4	25 μg/kg	93.6	66.0	120
EP132B-SD: Dibenz(a.h)anthracene 53-70-3	4	μg/kg	<4	25 μg/kg	88.8	64.0	122
EP132B-SD: Indeno(1.2.3.cd)pyrene 193-39-5	4	μg/kg	<4	25 μg/kg	88.7	64.0	120
EP132B-SD: Coronene 191-07-1	5	μg/kg	<5	25 μg/kg	87.6	68.0	136
EP132B-SD: Sum of PAHs	4	μg/kg	<4				
Sub-Matrix: WATER			Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 6250538)							
EG020A-T: Antimony 7440-36-0	0.001	mg/L	<0.001	0.02 mg/L	# 125	87.0	115
EG020A-T: Arsenic 7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	105	88.0	112
EG020A-T: Cadmium 7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	88.0	111
EG020A-T: Chromium 7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	105	89.0	115
EG020A-T: Copper 7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	88.0	116
EG020A-T: Lead 7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	112
EG020A-T: Nickel 7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	88.0	116
EG020A-T: Zinc 7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	105	84.0	114
EG020T: Total Metals by ICP-MS (QCLot: 6250540)							
EG020B-T: Silver 7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	94.6	84.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6251194)							
EG035T: Mercury 7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.1	84.0	118
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot:							
EK059G: Nitrite + Nitrate as N	0.01	mg/L	<0.01	0.5 mg/L	99.3	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6266832							
EK061G: Total Kjeldahl Nitrogen as N	0.1	mg/L	<0.1	10 mg/L	91.1	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6266833)						

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Sub-Matrix: WATER				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6266833)								
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	4.42 mg/L	105	84.7	106	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC	Lot: 6251452)								
EP075(SIM): Naphthalene	91-20-3	1	μg/L	<1.0	10 μg/L	84.1	50.0	110	
EP075(SIM): Acenaphthylene	208-96-8	1	μg/L	<1.0	10 μg/L	87.6	49.0	124	
EP075(SIM): Acenaphthene	83-32-9	1	μg/L	<1.0	10 μg/L	93.5	55.0	114	
EP075(SIM): Fluorene	86-73-7	1	μg/L	<1.0	10 μg/L	90.8	55.0	119	
EP075(SIM): Phenanthrene	85-01-8	1	μg/L	<1.0	10 μg/L	85.1	51.0	127	
EP075(SIM): Anthracene	120-12-7	1	μg/L	<1.0	10 μg/L	84.4	55.0	127	
EP075(SIM): Fluoranthene	206-44-0	1	μg/L	<1.0	10 μg/L	90.4	55.0	127	
EP075(SIM): Pyrene	129-00-0	1	μg/L	<1.0	10 μg/L	91.4	54.0	126	
EP075(SIM): Benz(a)anthracene	56-55-3	1	μg/L	<1.0	10 μg/L	82.3	47.0	136	
EP075(SIM): Chrysene	218-01-9	1	μg/L	<1.0	10 μg/L	82.8	51.0	129	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	μg/L	<1.0	10 μg/L	79.8	55.0	132	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	μg/L	<1.0	10 μg/L	79.5	58.0	128	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	μg/L	<0.5	10 μg/L	77.3	55.0	131	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	μg/L	<1.0	10 μg/L	73.2	52.0	133	
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	μg/L	<1.0	10 μg/L	70.0	48.0	137	
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	μg/L	<1.0	10 μg/L	77.8	53.0	131	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 625	1453)								
EP071: C10 - C14 Fraction		50	μg/L	<50	1192 μg/L	53.8	51.9	126	
EP071: C15 - C28 Fraction		100	μg/L	<100	1390 μg/L	58.8	51.4	124	
EP071: C29 - C36 Fraction		50	μg/L	<50					
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6260	0169)								
EP080: C6 - C9 Fraction		20	μg/L	<20	180 μg/L	96.3	77.0	122	
EP080/071: Total Recoverable Hydrocarbons - NEPM 201 EP071: >C10 - C16 Fraction	13 Fractions (QCI	_ot: 6251453) 100	μg/L	<100	1592 μg/L	50.0	51.0	422	
EP071: >C16 - C34 Fraction		100	μg/L	<100	932 μg/L	56.3 58.2	49.5	133 123	
EP071: >C16 - C34 Fraction EP071: >C34 - C40 Fraction		100	μg/L	<100		58.2		123	
			P9/-	.00					
EP080/071: Total Recoverable Hydrocarbons - NEPM 201 EP080: C6 - C10 Fraction	C6 C10	20 20	μg/L	<20	225 μg/L	92.5	76.0	121	
EP080: C6 - C10 Fraction minus BTEX (F1)	C6 C10-BTE	20	μg/L	<20		92.5			
El 600. 00 Olo Haction militas BTEX (LT)	X		F3						
EP080: BTEXN (QCLot: 6260169)									
EP080: Benzene	71-43-2	1	μg/L	<1	10 μg/L	106	79.8	115	

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD

Project : 003344 PoB (Bundaberg) 2024 SAP



Sub-Matrix: WATER				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Acceptable Limits (%)		
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP080: BTEXN (QCLot: 6260169) - continued									
EP080: Toluene	108-88-3	2	μg/L	<2	10 μg/L	98.8	78.6	116	
EP080: Ethylbenzene	100-41-4	2	μg/L	<2	10 μg/L	88.7	77.3	115	
EP080: meta- & para-Xylene	108-38-3	2	μg/L	<2	20 μg/L	90.8	82.0	118	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	μg/L	<2	10 μg/L	95.9	86.0	119	
EP080: Total Xylenes		2	μg/L	<2					
EP080: Sum of BTEX		1	μg/L	<1					
EP080: Naphthalene	91-20-3	5	μg/L	<5	10 μg/L	102	77.8	116	
EP090: Organotin Compounds (Soluble) (QCLot:	6246519)								
EP090S: Tributyltin	56573-85-4	2	ngSn/L	<2	147 ngSn/L	53.5	30.7	134	

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				Ma	atrix Spike (MS) Report	t	
				Spike	SpikeRecovery(%)	Acceptable l	Limits (%)
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Re	coverable Mercury by FIMS (Low Level) (QCLot: 625295	3)					
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EG035T-LL: Mercury	7439-97-6	0.5 mg/kg	99.7	70.0	130
EG020-SD: Total N	Metals in Sediments by ICPMS (QCLot: 6252952)						
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EG020-SD: Arsenic	7440-38-2	50 mg/kg	85.2	70.0	130
		EG020-SD: Cadmium	7440-43-9	50 mg/kg	87.3	70.0	130
		EG020-SD: Chromium	7440-47-3	50 mg/kg	86.0	70.0	130
		EG020-SD: Copper	7440-50-8	250 mg/kg	85.6	70.0	130
		EG020-SD: Lead	7439-92-1	250 mg/kg	86.6	70.0	130
		EG020-SD: Nickel	7440-02-0	50 mg/kg	90.0	70.0	130
		EG020-SD: Selenium	7782-49-2	50 mg/kg	85.1	70.0	130
		EG020-SD: Zinc	7440-66-6	250 mg/kg	85.6	70.0	130
EK059G: Nitrite p	lus Nitrate as N (NOx) by Discrete Analyser (QCLot: 62	46504)					
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EK059G: Nitrite + Nitrate as N (Sol.)		2.5 mg/kg	101	70.0	130
EK061G: Total Kje	Idahl Nitrogen By Discrete Analyser (QCLot: 6250052)						
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		500 mg/kg	89.1	70.0	130
EK061G: Total Kje	Idahl Nitrogen By Discrete Analyser (QCLot: 6256657)						
EB2442741-006	OSB2 HOLD - chip tray analysis until results come back	EK061G: Total Kjeldahl Nitrogen as N		500 mg/kg	80.6	70.0	130
EK067G: Total Pho	osphorus as P by Discrete Analyser (QCLot: 6250051)						
			<u> </u>				

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Sub-Matrix: SOIL				Ма	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Acceptable	Limits (%)
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK067G: Total Pho	sphorus as P by Discrete Analyser (QCLot: 6250051)	- continued					
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		100 mg/kg	125	70.0	130
EK067G: Total Pho	sphorus as P by Discrete Analyser (QCLot: 6256656)						
EB2442741-006	OSB2 HOLD - chip tray analysis until results come back	EK067G: Total Phosphorus as P		100 mg/kg	73.4	70.0	130
EP080/071: Total F	etroleum Hydrocarbons (QCLot: 6246465)						
EB2442840-004	Anonymous	EP080: C6 - C9 Fraction		8 mg/kg	# 57.3	70.0	130
EP080/071: Total F	ecoverable Hydrocarbons - NEPM 2013 Fractions (QC	Lot: 6246465)					
EB2442840-004	Anonymous	EP080: C6 - C10 Fraction	C6 C10	8 mg/kg	# 55.8	70.0	130
EP080: BTEXN (Q	CLot: 6246465)		_	ų į			
EB2442840-004	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	# 61.9	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	# 58.8	70.0	130
EP080-SD / EP071	SD: Total Petroleum Hydrocarbons (QCLot: 6246466)			ų ų			
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C9 Fraction		8 mg/kg	72.2	70.0	130
FP080-SD / FP071	SD: Total Petroleum Hydrocarbons (QCLot: 6257191)						
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EP071-SD-SV: C10 - C14 Fraction		189 mg/kg	75.0	70.0	130
		EP071-SD-SV: C15 - C28 Fraction		203 mg/kg	78.2	70.0	130
EP080-SD / EP071	SD: Total Recoverable Hydrocarbons (QCLot: 624646	6)					
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EP080-SD: C6 - C10 Fraction	C6_C10	8 mg/kg	72.4	70.0	130
EP080-SD / EP071	SD: Total Recoverable Hydrocarbons (QCLot: 625719		_	ų į			
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EP071-SD-SV: >C10 - C16 Fraction		251 mg/kg	75.6	70.0	130
	analysis analysis some some	EP071-SD-SV: >C16 - C34 Fraction		133 mg/kg	80.7	70.0	130
EP080-SD: BTEXN	(QCLot: 6246466)						
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EP080-SD: Benzene	71-43-2	2 mg/kg	82.5	70.0	130
	, , , , , , , , , , , , , , , , , , ,	EP080-SD: Toluene	108-88-3	2 mg/kg	77.2	70.0	130
EP090: Organotin	Compounds (QCLot: 6261935)						
EB2442741-002	OSG1 HOLD - chip tray analysis until results come back	EP090: MonobutyItin	78763-54-9	1.25 μgSn/kg	114	20.0	130
		EP090: Dibutyltin	1002-53-5	1.25 µgSn/kg	119	20.0	130
		EP090: Tributyltin	56573-85-4	1.25 µgSn/kg	97.4	20.0	130
EP132B: Polynucle	ear Aromatic Hydrocarbons (QCLot: 6248693)						
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP132B-SD: Naphthalene	91-20-3	25 μg/kg	83.4	70.0	130
		EP132B-SD: 2-Methylnaphthalene	91-57-6	25 μg/kg	107	70.0	130
		EP132B-SD: Acenaphthylene	208-96-8	25 μg/kg	84.4	70.0	130
		EP132B-SD: Acenaphthene	83-32-9	25 μg/kg	83.9	70.0	130
		EP132B-SD: Fluorene	86-73-7	25 μg/kg	82.7	70.0	130
		EP132B-SD: Phenanthrene	85-01-8	25 μg/kg	92.9	70.0	130
		EP132B-SD: Anthracene	120-12-7	25 μg/kg	89.7	70.0	130

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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: Polynucle	ear Aromatic Hydrocarbons (QCLot: 6248693) - con	tinued							
EB2442741-001	E3 HOLD - chip tray analysis until results come back	EP132B-SD: Fluoranthene	206-44-0	25 μg/kg	97.3	70.0	130		
		EP132B-SD: Pyrene	129-00-0	25 μg/kg	94.8	70.0	130		
		EP132B-SD: Benz(a)anthracene	56-55-3	25 μg/kg	95.1	70.0	130		
		EP132B-SD: Chrysene	218-01-9	25 μg/kg	98.0	70.0	130		
		EP132B-SD: Benzo(b+j)fluoranthene	205-99-2	25 μg/kg	94.2	70.0	130		
			205-82-3						
		EP132B-SD: Benzo(k)fluoranthene	207-08-9	25 μg/kg	81.8	70.0	130		
		EP132B-SD: Benzo(e)pyrene	192-97-2	25 μg/kg	85.8	70.0	130		
		EP132B-SD: Benzo(a)pyrene	50-32-8	25 μg/kg	89.2	70.0	130		
		EP132B-SD: Perylene	198-55-0	25 μg/kg	88.4	70.0	130		
		EP132B-SD: Benzo(g.h.i)perylene	191-24-2	25 μg/kg	89.9	70.0	130		
		EP132B-SD: Dibenz(a.h)anthracene	53-70-3	25 μg/kg	86.3	70.0	130		
		EP132B-SD: Indeno(1.2.3.cd)pyrene	193-39-5	25 μg/kg	86.4	70.0	130		
		EP132B-SD: Coronene	191-07-1	25 μg/kg	81.8	70.0	130		
Sub-Matrix: WATER				Ma	atrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Acceptable	Limits (%)		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High		
EG020T: Total Met	als by ICP-MS (QCLot: 6250538)								
EB2442858-009	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	107	70.0	130		
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	102	70.0	130		
		EG020A-T: Chromium	7440-47-3	1 mg/L	106	70.0	130		
		EG020A-T: Copper	7440-50-8	1 mg/L	102	70.0	130		
		EG020A-T: Lead	7439-92-1	1 mg/L	102	70.0	130		
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	70.0	130		
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	70.0	130		
EG035T: Total Re	coverable Mercury by FIMS (QCLot: 6251194)								
EB2443096-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	81.8	70.0	130		
EK059G: Nitrite n	us Nitrate as N (NOx) by Discrete Analyser (QCLot:			, and the second se					
EB2441194-012	Anonymous			0.5 mg/L	94.2	70.0	130		
		EK059G: Nitrite + Nitrate as N		0.5 mg/L	94.2	70.0	130		
	dahl Nitrogen By Discrete Analyser (QCLot: 626683	2)							
EB2440821-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	# Not	70.0	130		
					Determined				
EK067G: Total Pho	osphorus as P by Discrete Analyser (QCLot: 626683	3)							
EB2440821-002	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	# Not	70.0	130		
		·			Determined				
EP080/071: Total F	etroleum Hydrocarbons (QCLot: 6260169)								
EB2441998-010	Anonymous	EP080; C6 - C9 Fraction		40 μg/L	115	70.0	130		
		Li 000. Co - Ca i iactioli		Ι ΙΟ μ9/Ε	110	7 0.0	100		

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Sub-Matrix: WATER	b-Matrix: WATER				atrix Spike (MS) Report	f		
				Spike	SpikeRecovery(%)	Acceptable l	Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
EP080/071: Total F	Recoverable Hydrocarbons - NEPM 2013 Fractions (QCL							
EB2441998-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	40 μg/L	111	70.0	130	
EP080: BTEXN (Q	EP080: BTEXN (QCLot: 6260169)							
EB2441998-010	Anonymous	EP080: Benzene	71-43-2	10 μg/L	116	70.0	130	
		EP080: Toluene	108-88-3	10 μg/L	109	70.0	130	
EP090: Organotin	EP090: Organotin Compounds (Soluble) (QCLot: 6246519)							
EP2418243-006	Anonymous	EP090S: Tributyltin	56573-85-4	147 ngSn/L	58.9	20.0	130	



QA/QC Compliance Assessment to assist with Quality Review

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD Laboratory : Environmental Division Brisbane

Contact : Freddie Pastorelli Telephone : +61-7-3552-8685

Project : 003344 PoB (Bundaberg) 2024 SAP Date Samples Received : 06-Dec-2024

Site : Offshore Sites Issue Date : 19-Dec-2024

Sampler : ANGUS WILLIAMS, FELIX REYNOLDS No. of samples received : 9

Order number : No PO Provided : 9

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 Duplicate outliers occur.
- Laboratory Control outliers exist please see following pages for full details.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.

Outliers: Analysis Holding Time Compliance

NO Analysis Holding Time Outliers exist.

Outliers: Frequency of Quality Control Samples

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

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD
Project : 003344 PoB (Bundaberg) 2024 SAP

ALS

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
Matrix Spike (MS) Recoveries							
EP080/071: Total Petroleum Hydrocarbons	EB2442840004	Anonymous	C6 - C9 Fraction		57.3 %	70.0-130%	Recovery less than lower data quality
							objective
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	EB2442840004	Anonymous	C6 - C10 Fraction	C6_C10	55.8 %	70.0-130%	Recovery less than lower data quality
							objective
EP080: BTEXN	EB2442840004	Anonymous	Benzene	71-43-2	61.9 %	70.0-130%	Recovery less than lower data quality
							objective
EP080: BTEXN	EB2442840004	Anonymous	Toluene	108-88-3	58.8 %	70.0-130%	Recovery less than lower data quality
							objective

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EG020T: Total Metals by ICP-MS	QC-6250536-003		Antimony	7440-36-0	125 %	87.0-115%	Recovery greater than upper control
							limit
Matrix Spike (MS) Recoveries							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	EB2440821002	Anonymous	Total Kjeldahl Nitrogen		Not		MS recovery not determined,
			as N		Determined		background level greater than or
							equal to 4x spike level.
EK067G: Total Phosphorus as P by Discrete Analyser	EB2440821002	Anonymous	Total Phosphorus as P		Not		MS recovery not determined,
					Determined		background level greater than or
							equal to 4x spike level.

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 Duplicates (DUP)						
Soil Particle Density	EA152	0	7	0.00	10.00	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)						
Organotin Compounds (Soluble)	EP090S	1	13	7.69	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
TRH - Semivolatile Fraction	EP071	0	10	0.00	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 - Semivolatile Fraction	EP071	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

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BMT COMMERCIAL AUSTRALIA PTY LTD Client **Project** 003344 PoB (Bundaberg) 2024 SAP



Analysis Holding Time Compliance

OSB3 - HOLD - chip tray analysis until results come back

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: **x** = Holding time breach; ✓ = Within holding time. Method Sample Date Extraction / Preparation Analysis Container / Client Sample ID(s) Date extracted Due for extraction Evaluation Due for analysis Evaluation Date analysed EA033-A: Actual Acidity Snap Lock Bag - frozen (EA033) 04-Dec-2024 04-Dec-2025 19-Mar-2025 19-Dec-2024 19-Dec-2024 E3 - HOLD - chip tray analysis until results come back. OSG1 - HOLD - chip tray analysis until results come back. OSG2 - HOLD - chip tray analysis until results come back, OSG3 - HOLD - chip tray analysis until results OSB1 - HOLD - chip tray analysis until results come back, OSB2 - HOLD - chip tray analysis until results come back. OSB3 - HOLD - chip tray analysis until results come back EA033-B: Potential Acidity Snap Lock Bag - frozen (EA033) 04-Dec-2025 04-Dec-2024 19-Dec-2024 19-Dec-2024 19-Mar-2025 E3 - HOLD - chip tray analysis until results come back, OSG1 - HOLD - chip tray analysis until results come back, OSG2 - HOLD - chip tray analysis until results come back, OSG3 - HOLD - chip tray analysis until results come back. OSB1 - HOLD - chip tray analysis until results come back, OSB2 - HOLD - chip tray analysis until results come back. OSB3 - HOLD - chip tray analysis until results come back **EA033-C: Acid Neutralising Capacity** Snap Lock Bag - frozen (EA033) 04-Dec-2025 19-Mar-2025 OSG1 - HOLD - chip tray analysis until results 04-Dec-2024 19-Dec-2024 19-Dec-2024 E3 - HOLD - chip tray analysis until results come back, come back, OSG2 - HOLD - chip tray analysis until results come back, OSG3 - HOLD - chip tray analysis until results come back. OSB1 - HOLD - chip tray analysis until results come back, OSB2 - HOLD - chip tray analysis until results come back.

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-D: Retained Acidity								
Snap Lock Bag - frozen (EA033) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	19-Dec-2024	04-Dec-2025	✓	19-Dec-2024	19-Mar-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EA033-E: Acid Base Accounting								
Snap Lock Bag - frozen (EA033) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	19-Dec-2024	04-Dec-2025	✓	19-Dec-2024	19-Mar-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back,	OSB2 - HOLD - chip tray analysis until results							
OSB3 - HOLD - chip tray analysis until results come back								
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) E3 - HOLD - chip tray analysis until results come back, come back.	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024				10-Dec-2024	18-Dec-2024	✓
OSG2 - HOLD - chip tray analysis until results come back, come back.	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back,	OSB2 - HOLD - chip tray analysis until results							
OSB3 - HOLD - chip tray analysis until results come back								
EA150: Particle Sizing								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024				13-Dec-2024	02-Jun-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back,	OSB2 - HOLD - chip tray analysis until results							
OSB3 - HOLD - chip tray analysis until results come back								

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Soil Classification based on Particle Size								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H) E3 - HOLD - chip tray analysis until results come back, come back.	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024				13-Dec-2024	02-Jun-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EA152: Soil Particle Density								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA152) E3 - HOLD - chip tray analysis until results come back, come back, OSG2 - HOLD - chip tray analysis until results come back,	OSG1 - HOLD - chip tray analysis until results OSG3 - HOLD - chip tray analysis until results	04-Dec-2024				13-Dec-2024	02-Jun-2025	✓
come back, OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EG005(ED093)-SD: Total Metals in Sediments by ICP-AES								
Soil Glass Jar - Unpreserved (EG005-SD) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	12-Dec-2024	02-Jun-2025	✓	17-Dec-2024	02-Jun-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EG020-SD: Total Metals in Sediments by ICPMS								
Soil Glass Jar - Unpreserved (EG020-SD) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	12-Dec-2024	02-Jun-2025	✓	17-Dec-2024	02-Jun-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back, OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSG3 - HOLD - chip tray analysis until results OSB2 - HOLD - chip tray analysis until results							

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	ktraction / 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) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	12-Dec-2024	01-Jan-2025	✓	17-Dec-2024	01-Jan-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back,	OSB2 - HOLD - chip tray analysis until results							
OSB3 - HOLD - chip tray analysis until results come back								
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyst Soil Glass Jar - Unpreserved (EK059G) E3 - HOLD - chip tray analysis until results come back, come back, OSG2 - HOLD - chip tray analysis until results come back,	OSG1 - HOLD - chip tray analysis until results OSG3 - HOLD - chip tray analysis until results	04-Dec-2024	10-Dec-2024	01-Jan-2025	✓	12-Dec-2024	12-Dec-2024	√
come back, OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Soil Glass Jar - Unpreserved (EK061G) E3 - HOLD - chip tray analysis until results come back, come back.	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	12-Dec-2024	01-Jan-2025	✓	13-Dec-2024	09-Jan-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back	OSG3 - HOLD - chip tray analysis until results							
Soil Glass Jar - Unpreserved (EK061G) OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results	04-Dec-2024	13-Dec-2024	01-Jan-2025	✓	13-Dec-2024	10-Jan-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Soil Glass Jar - Unpreserved (EK067G) E3 - HOLD - chip tray analysis until results come back, come back.	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	12-Dec-2024	01-Jan-2025	1	13-Dec-2024	09-Jan-2025	1
OSG2 - HOLD - chip tray analysis until results come back, come back	OSG3 - HOLD - chip tray analysis until results							
Soil Glass Jar - Unpreserved (EK067G) OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results	04-Dec-2024	13-Dec-2024	01-Jan-2025	✓	13-Dec-2024	10-Jan-2025	✓

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time
Method		Sample Date	Ex	traction / Preparation		Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP003: Total Organic Carbon (TOC) in Soil								
Pulp Bag (EP003) E3 - HOLD - chip tray analysis until results come back, OS come back.	G1 - HOLD - chip tray analysis until results	04-Dec-2024	17-Dec-2024	01-Jan-2025	1	17-Dec-2024	01-Jan-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080) Field blank 3		28-Nov-2024	10-Dec-2024	12-Dec-2024	1	12-Dec-2024	12-Dec-2024	1
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fraction	ons							
Soil Glass Jar - Unpreserved (EP080) Field blank 3		28-Nov-2024	10-Dec-2024	12-Dec-2024	✓	12-Dec-2024	12-Dec-2024	√
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) Field blank 3		28-Nov-2024	10-Dec-2024	12-Dec-2024	✓	12-Dec-2024	12-Dec-2024	√
EP080-SD / EP071-SD: Total Petroleum Hydrocarbons								
	GG1 - HOLD - chip tray analysis until results	04-Dec-2024	10-Dec-2024	18-Dec-2024	1	14-Dec-2024	18-Dec-2024	✓
come back, OSG2 - HOLD - chip tray analysis until results come back, come back.	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back.	OSB2 - HOLD - chip tray analysis until results							
OSB3 - HOLD - chip tray analysis until results come back								
Soil Glass Jar - Unpreserved (EP071-SD-SV)								
E3 - HOLD - chip tray analysis until results come back, OS come back,	GG1 - HOLD - chip tray analysis until results	04-Dec-2024	13-Dec-2024	18-Dec-2024	✓	18-Dec-2024	22-Jan-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back.	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							

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Client : BMT COMMERCIAL AUSTRALIA PTY LTD



Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / 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) E3 - HOLD - chip tray analysis until results come back, come back.	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	10-Dec-2024	18-Dec-2024	✓	14-Dec-2024	18-Dec-2024	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
Soil Glass Jar - Unpreserved (EP071-SD-SV) E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	13-Dec-2024	18-Dec-2024	✓	18-Dec-2024	22-Jan-2025	√
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EP080-SD: BTEXN								
Soil Glass Jar - Unpreserved (EP080-SD) E3 - HOLD - chip tray analysis until results come back, come back, OSG2 - HOLD - chip tray analysis until results come back,	OSG1 - HOLD - chip tray analysis until results OSG3 - HOLD - chip tray analysis until results	04-Dec-2024	10-Dec-2024	18-Dec-2024	✓	14-Dec-2024	18-Dec-2024	√
come back, OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							
EP090: Organotin Compounds								
Soil Glass Jar - Unpreserved (EP090)			<u> </u>					
E3 - HOLD - chip tray analysis until results come back, come back,	OSG1 - HOLD - chip tray analysis until results	04-Dec-2024	16-Dec-2024	18-Dec-2024	✓	18-Dec-2024	25-Jan-2025	✓
OSG2 - HOLD - chip tray analysis until results come back, come back,	OSG3 - HOLD - chip tray analysis until results							
OSB1 - HOLD - chip tray analysis until results come back, come back, OSB3 - HOLD - chip tray analysis until results come back	OSB2 - HOLD - chip tray analysis until results							

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Matrix: SOIL

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

Matrix. Soil						Dieacii, • - Willi	g time
Method	Sample Date	E	traction / 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)							
OSG1 - HOLD - chip tray analysis until results come back	04-Dec-2024	12-Dec-2024	18-Dec-2024	✓	12-Dec-2024	21-Jan-2025	✓
Soil Glass Jar - Unpreserved (EP132B-SD)							
E3 - HOLD - chip tray analysis until results come back	04-Dec-2024	12-Dec-2024	18-Dec-2024	✓	16-Dec-2024	21-Jan-2025	✓
Soil Glass Jar - Unpreserved (EP132B-SD)	04 Dec 0004	40 D 0004	18-Dec-2024		47 Day 2004	21-Jan-2025	
OSG2 - HOLD - chip tray analysis until results come back, OSG3 - HOLD - chip tray analysis until results	04-Dec-2024	12-Dec-2024	16-Dec-2024	✓	17-Dec-2024	21-Jan-2025	✓
come back,							
OSB1 - HOLD - chip tray analysis until results come back, OSB2 - HOLD - chip tray analysis until results come back,							
OSB3 - HOLD - chip tray analysis until results come back							
OSDS - HOLD - Chilp tray alialysis until results come back							
Matrix: WATER				Evaluation	n: × = Holding time	breach; ✓ = Withi	in holding time
Method	Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG020B-T)							
Rinsate	04-Dec-2024	11-Dec-2024	02-Jun-2025	✓	14-Dec-2024	02-Jun-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
Rinsate	04-Dec-2024				11-Dec-2024	01-Jan-2025	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
Rinsate	04-Dec-2024				10-Dec-2024	01-Jan-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)			04.1.0005			04.1.000	
Rinsate	04-Dec-2024	17-Dec-2024	01-Jan-2025	✓	17-Dec-2024	01-Jan-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)	0.4 D 000.4	47.0	04 0005		47.0	04 1 0005	
Rinsate	04-Dec-2024	17-Dec-2024	01-Jan-2025	✓	17-Dec-2024	01-Jan-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons		1			•	T.	
Amber Glass Bottle - Unpreserved (EP075(SIM))	04-Dec-2024	11-Dec-2024	11-Dec-2024		14-Dec-2024	20-Jan-2025	
Rinsate	04-DeC-2024	11-Dec-2024	11-De0-2024	✓	14-DeC-2024	20-Jail-2025	✓
EP080/071: Total Petroleum Hydrocarbons	<u> </u>				<u> </u>	The state of the s	
Amber Glass Bottle - Unpreserved (EP071)	04-Dec-2024	11-Dec-2024	11-Dec-2024	,	12-Dec-2024	20-Jan-2025	,
Rinsate Amber VOC Vial - Sulfuric Acid (EP080)	04-Dec-2024	11-060-2024	11-060-2024	✓	12-Dec-2024	20-0411-2020	✓
Rinsate	04-Dec-2024	14-Dec-2024	18-Dec-2024	1	16-Dec-2024	18-Dec-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	04-Dec-2024	11-Dec-2024	11-Dec-2024	1	12-Dec-2024	20-Jan-2025	1
Amber VOC Vial - Sulfuric Acid (EP080)							·
Rinsate	04-Dec-2024	14-Dec-2024	18-Dec-2024	1	16-Dec-2024	18-Dec-2024	✓

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Matrix: WATER				Evaluation	: x = Holding time	breach; ✓ = Withir	n holding time
Method	Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	04-Dec-2024	14-Dec-2024	18-Dec-2024	✓	16-Dec-2024	18-Dec-2024	✓
EP090: Organotin Compounds (Soluble)							
Amber Glass Bottle - Unpreserved (EP090S)							
Rinsate	04-Dec-2024	10-Dec-2024	11-Dec-2024	1	12-Dec-2024	19-Jan-2025	1

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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				Evaluatio	n: × = Quality Co	ntrol frequency	not within specification ; \checkmark = Quality Control frequency within specification.
Quality Control Sample Type		С	ount	Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Analyser							
Organotin Analysis	EP090	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Soil Particle Density	EA152	0	7	0.00	10.00	3 £	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fractions Only	EP071-SD-SV	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Analyser							
Organotin Analysis	EP090	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAHs in Sediments by GCMS(SIM)	EP132B-SD	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Soil Particle Density	EA152	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fe and Al in Sediments by ICPAES	EG005-SD	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS (Low Level)	EG035T-LL	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Sediments by ICPMS	EG020-SD	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP003	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Semivolatile Fractions Only	EP071-SD-SV	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX in Sediments	EP080-SD	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Analyser							

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Matrix: SOIL Evaluation: × = Quality Control frequency not within specification; ✓ = Quality Control frequency within specification. Quality Control Sample Type Count Rate (%) **Quality Control Specification** Method Evaluation Analytical Methods QC Regular Expected Actual Method Blanks (MB) - Continued Organotin Analysis NEPM 2013 B3 & ALS QC Standard EP090 1 10 10.00 5.00 1 PAHs in Sediments by GCMS(SIM) 1 15 6.67 5.00 NEPM 2013 B3 & ALS QC Standard EP132B-SD 1 TKN as N By Discrete Analyser 2 40 5.00 5.00 NEPM 2013 B3 & ALS QC Standard EK061G 1 Total Fe and Al in Sediments by ICPAES 1 20 NEPM 2013 B3 & ALS QC Standard EG005-SD 5.00 5.00 1 Total Mercury by FIMS (Low Level) 1 20 5.00 5.00 NEPM 2013 B3 & ALS QC Standard EG035T-LL 1 Total Metals in Sediments by ICPMS 20 NEPM 2013 B3 & ALS QC Standard 1 EG020-SD 5.00 5.00 1 Total Organic Carbon 1 20 NEPM 2013 B3 & ALS QC Standard EP003 5.00 5.00 1 Total Phosphorus By Discrete Analyser 2 40 EK067G 5.00 5.00 NEPM 2013 B3 & ALS QC Standard TPH - Semivolatile Fractions Only 1 20 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard EP071-SD-SV TRH Volatiles/BTEX 1 16 EP080 6.25 5.00 1 NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX in Sediments 1 7 14.29 5.00 NEPM 2013 B3 & ALS QC Standard EP080-SD Matrix Spikes (MS) 20 5.00 5.00 NEPM 2013 B3 & ALS QC Standard Nitrite and Nitrate as N (NOx)- Soluble by Discrete EK059G 1 1 Analyser Organotin Analysis 10 NEPM 2013 B3 & ALS QC Standard EP090 1 10.00 5.00 ✓ PAHs in Sediments by GCMS(SIM) 1 15 6.67 5.00 NEPM 2013 B3 & ALS QC Standard EP132B-SD 1 TKN as N By Discrete Analyser EK061G 2 40 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS (Low Level) 1 20 5.00 5.00 NEPM 2013 B3 & ALS QC Standard EG035T-LL 1 Total Metals in Sediments by ICPMS 20 EG020-SD 1 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Phosphorus By Discrete Analyser 2 40 5.00 5.00 NEPM 2013 B3 & ALS QC Standard EK067G 1 TPH - Semivolatile Fractions Only 1 20 NEPM 2013 B3 & ALS QC Standard EP071-SD-SV 5.00 5.00 ✓ TRH Volatiles/BTEX 1 16 6.25 5.00 NEPM 2013 B3 & ALS QC Standard EP080 1 TRH Volatiles/BTEX in Sediments 7 14.29 5.00 NEPM 2013 B3 & ALS QC Standard EP080-SD 1

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	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organotin Compounds (Soluble)	EP090S	1	13	7.69	10.00	3c	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	10.00)c	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	7	28.57	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	2	5	40.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	10	0.00	10.00)c	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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TRH Volatiles/BTEX

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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 Method Evaluation Analytical Methods QC Reaular Expected Actual _aboratory Control Samples (LCS) - Continued Organotin Compounds (Soluble) NEPM 2013 B3 & ALS QC Standard EP090S 1 13 7.69 5.00 1 PAH/Phenols (GC/MS - SIM) 1 13 7.69 NEPM 2013 B3 & ALS QC Standard EP075(SIM) 5.00 1 Total Kjeldahl Nitrogen as N By Discrete Analyser 1 13 7.69 5.00 NEPM 2013 B3 & ALS QC Standard EK061G 1 Total Mercury by FIMS 1 20 NEPM 2013 B3 & ALS QC Standard EG035T 5.00 5.00 1 Total Metals by ICP-MS - Suite A 1 7 14.29 5.00 NEPM 2013 B3 & ALS QC Standard EG020A-T 1 Total Metals by ICP-MS - Suite B 5 NEPM 2013 B3 & ALS QC Standard 1 EG020B-T 20.00 5.00 1 Total Phosphorus as P By Discrete Analyser 1 20 NEPM 2013 B3 & ALS QC Standard 5.00 5.00 EK067G TRH - Semivolatile Fraction 1 10 FP071 10.00 5.00 1 NEPM 2013 B3 & ALS QC Standard TRH Volatiles/BTEX 1 19 5.26 5.00 NEPM 2013 B3 & ALS QC Standard EP080 Method Blanks (MB) Nitrite and Nitrate as N (NOx) by Discrete Analyser 1 20 5.00 5.00 NEPM 2013 B3 & ALS QC Standard EK059G 1 Organotin Compounds (Soluble) 1 13 NEPM 2013 B3 & ALS QC Standard 7.69 EP090S 5.00 1 PAH/Phenols (GC/MS - SIM) 1 13 7.69 5.00 NEPM 2013 B3 & ALS QC Standard EP075(SIM) 1 Total Kjeldahl Nitrogen as N By Discrete Analyser 1 13 7.69 NEPM 2013 B3 & ALS QC Standard EK061G 5.00 Total Mercury by FIMS EG035T 1 20 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Metals by ICP-MS - Suite A 1 7 14.29 EG020A-T 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Metals by ICP-MS - Suite B 1 5 20.00 5.00 NEPM 2013 B3 & ALS QC Standard EG020B-T Total Phosphorus as P By Discrete Analyser 1 20 5.00 NEPM 2013 B3 & ALS QC Standard EK067G 5.00 ✓ TRH - Semivolatile Fraction 1 10 10.00 5.00 1 NEPM 2013 B3 & ALS QC Standard EP071 TRH Volatiles/BTEX 19 EP080 1 5.26 5.00 1 NEPM 2013 B3 & ALS QC Standard Matrix Spikes (MS) Nitrite and Nitrate as N (NOx) by Discrete Analyser 20 NEPM 2013 B3 & ALS QC Standard EK059G 1 5.00 5.00 Organotin Compounds (Soluble) EP090S 1 13 7.69 5.00 1 NEPM 2013 B3 & ALS QC Standard PAH/Phenols (GC/MS - SIM) 0 13 0.00 5.00 NEPM 2013 B3 & ALS QC Standard EP075(SIM) × Total Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1 13 7.69 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Mercury by FIMS 1 20 EG035T 5.00 5.00 1 NEPM 2013 B3 & ALS QC Standard Total Metals by ICP-MS - Suite A EG020A-T 1 7 14.29 5.00 1 NEPM 2013 B3 & ALS QC Standard 20 Total Phosphorus as P By Discrete Analyser 1 NEPM 2013 B3 & ALS QC Standard EK067G 5.00 5.00 ✓ TRH - Semivolatile Fraction 0 10 0.00 5.00 NEPM 2013 B3 & ALS QC Standard EP071 ×

19

EP080

1

5.26

5.00

1

NEPM 2013 B3 & ALS QC Standard

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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
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1: Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Total Fe and Al in Sediments by ICPAES	EG005-SD	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). LORs per NODG
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.
Total Mercury by FIMS (Low Level)	EG035T-LL	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(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 SnCl2 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)
Nitrite and Nitrate as N (NOx)- 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 (NOx-N) and nitrate (NO3-N) by calculation, Combined oxidised Nitrogen (NO2+NO3) 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 + NOx) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO3- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrrogen, each determined seperately 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.
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 CO2) is automatically measured by infra-red detector.

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Analytical Methods	Method	Matrix	Method Descriptions
TPH - Semivolatile Fractions Only	EP071-SD-SV	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)
TRH Volatiles/BTEX	EP080	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. Compliant with NEPM Schedule B(3) amended.
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.
Organotin Analysis	EP090	SOIL	In house: Referenced to USEPA SW 846 - 8270 Prepared sample extracts are analysed by GC/MS coupled with high volume injection, and quanitified against an established 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.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	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.
Total Metals by ICP-MS - Suite B	EG020B-T	WATER	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.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 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).
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. 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)

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Work Order : EB2442741



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)
Organotin Compounds (Soluble)	EP090S	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by GC/MS coupled with high volume injection and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
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.
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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).
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 (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.
Organotin Sample Preparation	ORG35	SOIL	In house: 20g sample is spiked with surrogate and leached in a methanol:acetic acid:UHP water mix and vacuum filtered. Reagents and solvents are added to the sample and the mixture tumbled. The butyltin compounds are simultaneously derivatised and extracted. The extract is further extracted with petroleum ether. The resultant extracts are combined and concentrated for analysis.
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

Page : 17 of 17
Work Order : EB2442741

Client : BMT COMMERCIAL AUSTRALIA PTY LTD



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.
Organotin Sample Preparation	ORG34	WATER	In house. A specified volume of sample is spiked with surrogate, acidified and vacuum filtered. Reagents and solvent are added and the mixture tumbled. The butyltin compounds is derivitisated, extracted and the subtitution reaction completed. The extract is transferred to a separatory funnel and further extracted two times with petroleum ether. The resultant extracts are combined and concentrated for analysis.

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2442741-001 / PSD

Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: E3 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analy	sis N	lotes
-------	-------	-------

Samples analysed as received.

	•
Particle Size (mm)	% Passing
9.50	100%
4.75	87%
2.36	73%
1.18	60%
0.600	44%
0.425	23%
0.300	10%
0.150	4%
0.075	4%
Particle Size (microns)	
56	3%
40	3%
28	3%
20	3%
14	3%
10	3%
7	3%
5	3%
1	3%

0.818 Median Particle Size (mm)*

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.77

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Page 1 of 1 Template Version PKV8.0 180919

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2442741-002 / PSD

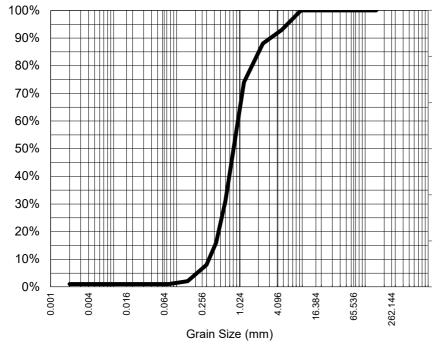
> Spring Hill Brisbane Qld

PROJECT:

SAMPLE ID: 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analy	/sis	Notes
-------	------	--------------

Samples analysed as received.

Particle Size (mm)	% Passing
9.50	100%
4.75	93%
2.36	88%
1.18	74%
0.600	31%
0.425	16%
0.300	8%
0.150	2%
0.075	1%
Particle Size (microns)	
58	1%
41	1%
29	1%
20	1%
15	1%
11	1%
7	1%
5	1%
2	1%

OSG1

Median Particle Size (mm)*	0.856

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.66

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Page 1 of 1 Template Version PKV8.0 180919

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2442741-003 / PSD

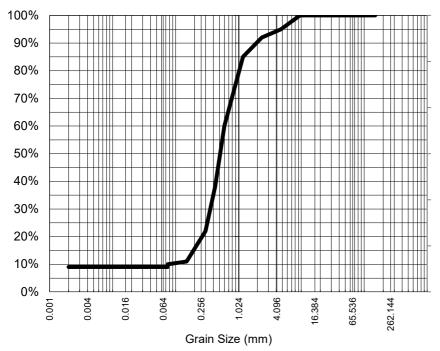
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: OSG2 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analy	/sis	Notes
-------	------	--------------

Samples analysed as received.

Particle Size (mm)	% Passing
9.50	100%
4.75	95%
2.36	92%
1.18	85%
0.600	60%
0.425	38%
0.300	22%
0.150	11%
0.075	10%
Particle Size (microns)	
58	9%
41	9%
29	9%
20	9%
15	9%
11	9%
7	9%
5	9%
2	9%

0.520 Median Particle Size (mm)*

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.65

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2442741-004 / PSD

Spring Hill

Brisbane Qld

OSG3 **PROJECT: SAMPLE ID:** 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analysis Notes

Samples analysed as received.

Particle Size (mm)	% Passing
,	
9.50	100%
4.75	99%
2.36	94%
1.18	69%
0.600	26%
0.425	12%
0.300	4%
0.150	1%
0.075	1%
Particle Size (microns)	
58	1%
41	1%
29	1%
20	1%
15	1%
11	1%
7	1%
5	1%
2	1%

Median Particle Size (mm)*

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.65

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Page 1 of 1 Template Version PKV8.0 180919

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2442741-005 / PSD

Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: OSB₁ 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analy	/sis	Notes
-------	------	--------------

Samples analysed as received.

Particle Size (mm)	% Passing
9.50	100%
4.75	90%
2.36	83%
1.18	66%
0.600	37%
0.425	20%
0.300	8%
0.150	2%
0.075	2%
Particle Size (microns)	
58	1%
41	1%
29	1%
21	1%
15	1%
11	1%
8	1%
5	1%
2	1%

0.860 Median Particle Size (mm)*

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.64

NATA Accreditation: 825 Site: Brisbane

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Certificate of Analysis

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

ADDRESS: Po Box 203 **REPORT NO:** EB2442741-006 / PSD

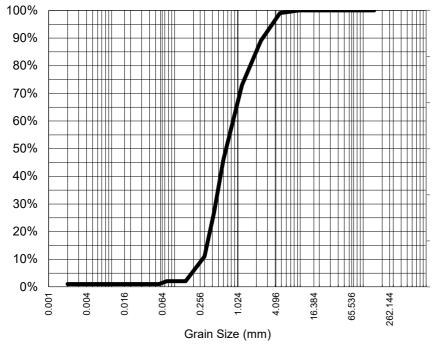
Spring Hill

Brisbane Qld

PROJECT: SAMPLE ID: OSB₂ 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Samples analysed as received.

Particle Size (mm)	% Passing
9.50	100%
4.75	99%
2.36	89%
1.18	73%
0.600	46%
0.425	27%
0.300	11%
0.150	2%
0.075	2%
Particle Size (microns)	
57	1%
41	1%
29	1%
20	1%
15	1%
10	1%
7	1%
5	1%
2	1%

0.686 Median Particle Size (mm)*

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description:

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.65

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Dispersion Method Shaker

Limit of Reporting: 1%

Satish Trivedi Soil Senior Chemist **Authorised Signatory**

Page 1 of 1 Template Version PKV8.0 180919

Certificate of Analysis

ALS Laboratory Group Pty Ltd 2 Byth Street Stafford, QLD 4053 pH 07 3243 7222 samples.brisbane@alsenviro.com

ALS Environmental



Brisbane QLD

Freddie Pastorelli DATE REPORTED: 13-Dec-2024 **CLIENT:**

COMPANY: BMT COMMERCIAL DATE RECEIVED: 6-Dec-2024

AUSTRALIA PTY LTD

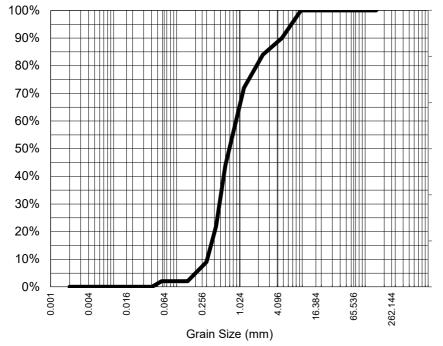
ADDRESS: Po Box 203 **REPORT NO:** EB2442741-007 / PSD

> Spring Hill Brisbane Qld

PROJECT: SAMPLE ID: OSB3 003344 PoB (Bundaberg) 2024

SAP

Particle Size Distribution



Analys	sis N	otes
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Samples analysed as received.

Particle Size (mm)	% Passing
9.50	100%
4.75	90%
2.36	84%
1.18	72%
0.600	44%
0.425	22%
0.300	9%
0.150	2%
0.075	2%
Particle Size (microns)	
58	2%
41	0%

0.724 Median Particle Size (mm)*

Limit of Reporting: 1%

10-Dec-24

Analysed:

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

AS1289.3.6.3 states that hydrometer analysis is not applicable for **Sample Comments:**

samples containing <10% fines (<75um). Results should be

assessed accordingly

Loss on Pretreatment NA

Sample Description: Dispersion Method Shaker

AS1289.3.6.2/AS1289.3.6.3 **Test Method:**

Soil Particle Density (<2.36mm) 2.6

NATA Accreditation: 825 Site: Brisbane

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Satish Trivedi Soil Senior Chemist **Authorised Signatory**



Port of Bundaberg Maintenance Dredging 2024 SAP Implementation OFFICIAL

Annex D Secondary Lab - Eurofins



Eurofins Environment Testing Australia Pty Ltd

Site# 25403

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261

Site# 1254

Geelong Sydney 19/8 Lewalan Street 179 Magowar Road Grovedale Girraween VIC 3216 NSW 2145 +61 3 8564 5000 +61 2 9900 8400 NATA# 1261 NATA# 1261

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Brisbane

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Eurofins ARL Pty Ltd ABN: 91 05 0159 898 Perth

46-48 Banksia Road +61 8 6253 4444 Site# 2370 & 2554

Auckland (Focus) 35 O'Rorke Road Unit C1/4 Pacific Rise. Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland

Penrose,

Auckland 1061

+64 9 526 4551

IANZ# 1327

Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290

Tauranga 1277 Cameron Road. Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Address:

web: www.eurofins.com.au

email: EnviroSales@eurofins.com

Company Name: BMT Commercial Australia Pty Ltd

Level 8, 200 Creek St Brisbane

QLD 4000

Project Name:

003344 BUNDABERG SAP

Order No.:

Report #: 1148596 Phone: 07 3831 6744

Welshpool

WA 6106

NATA# 2377

07 3832 3627 Fax:

Received: Oct 11, 2024 2:00 PM Due: Oct 18, 2024

5 Day

Priority: Contact Name: Freddie Pastorelli

Eurofins Analytical Services Manager: Emily ONeill

		Sa	ımple Detail			Antimony	Low Level Metal Preparation fee*	Silver	Total Organic Carbon	Particle Size by Sieve analysis*	Moisture Set	Chromium Suite - NASSG (Excluding ANC)	Eurofins Suite B6: BTEX/TRH/M8	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P	Polycyclic Aromatic Hydrocarbons (Trace level)	Organotins (as Sn) - ultra trace
Melb	ourne Laborate	ory - NATA # 12	61 Site # 12	54					Х	Х				Х	Х	Х
Sydr	ney Laboratory	- NATA # 1261	Site # 18217			Х	Х	Х					Х			
Brisl	oane Laborator	y - NATA # 126	1 Site # 2079	94 & 2780							Х	Х	Х			
Exte	rnal Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	SAP	Not Provided		Soil	B24-Oc0031836	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Test	Counts					1	1	1	1	1	1	1	1	1	1	1



BMT Commercial Australia Pty Ltd Level 8, 200 Creek St Brisbane QLD 4000





NATA Accredited Accreditation Number 1261 Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: Freddie Pastorelli

Report 1148596-S

Project name 003344 BUNDABERG SAP

Received Date Oct 11, 2024

Client Sample ID			SAP
Sample Matrix			Soil
Eurofins Sample No.			B24- Oc0031836
Date Sampled			Not Provided ^{I12}
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions		
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	20
TRH C15-C28	50	mg/kg	56
TRH C29-C36	50	mg/kg	59
TRH C10-C36 (Total)	50	mg/kg	135
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	55
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions		
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH >C10-C16 less Naphthalene (F2)*N01	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)N04	20	mg/kg	< 20
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions		
TRH >C10-C16	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons (Trace level)			
Acenaphthene	0.005	mg/kg	< 0.005
Acenaphthylene	0.005	mg/kg	< 0.005
Anthracene	0.005	mg/kg	< 0.005
Benz(a)anthracene	0.005	mg/kg	< 0.005
Benzo(a)pyrene - low level	0.005	mg/kg	< 0.005
Benzo(b&j)fluoranthene	0.005	mg/kg	< 0.005
Benzo(g.h.i)perylene	0.005	mg/kg	< 0.005
Benzo(k)fluoranthene	0.005	mg/kg	< 0.005
Chrysene	0.005	mg/kg	< 0.005
Dibenz(a.h)anthracene	0.005	mg/kg	< 0.005
Fluoranthene	0.005	mg/kg	< 0.005

Report Number: 1148596-S



Client Sample ID Sample Matrix			SAP Soil B24-
Eurofins Sample No.			Oc0031836
Date Sampled			Not Provided ^{I12}
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons (Trace level)	•	•	
Fluorene	0.005	mg/kg	< 0.005
Indeno(1.2.3-cd)pyrene	0.005	mg/kg	< 0.005
Naphthalene	0.005	mg/kg	< 0.005
Phenanthrene	0.005	mg/kg	< 0.005
Pyrene	0.005	mg/kg	< 0.005
Total PAH*	0.005	mg/kg	< 0.005
2-Fluorobiphenyl (surr.)	1	%	90
p-Terphenyl-d14 (surr.)	1	%	102
Organotins (as Sn) - ultra trace		_	
Dibutyltin as Sn (ultra trace)	1	ug/kg	< 1
Monobutyltin as Sn (ultra trace)	1	ug/kg	< 1
Tributyltin as Sn (ultra trace)	1	ug/kg	< 1
Tripropyltin as Sn (surr.)	1	%	133
Ammonia (as N)	5	mg/kg	18
Nitrate & Nitrite (as N)	5	mg/kg	< 5
Nitrate (as N)	5	mg/kg	< 5
Nitrite (as N)	5	mg/kg	< 5
Organic Nitrogen (as N)*	10	mg/kg	7882
Total Kjeldahl Nitrogen (as N)	10	mg/kg	7900
Total Nitrogen (as N)*	10	mg/kg	7900
Total Organic Carbon	0.1	%	1.8
Phosphorus	5	mg/kg	630
Particle Size by Sieve analysis*			
<63 Micron	0.1	% w/w	77
>2000 Micron	0.1	% w/w	0.8
1000-2000 Micron	0.1	% w/w	3.0
125-300 Micron	0.1	% w/w	4.9
300-500 Micron	0.1	% w/w	2.6
500-1000 Micron	0.1	% w/w	4.6
63-125 Micron	0.1	% w/w	7.1
Heavy Metals			
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	13
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	26
Copper	5	mg/kg	10
Lead	5	mg/kg	7.4
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	14
Silver	1	mg/kg	< 1
Zinc	5	mg/kg	30
Extraneous Material			
<2mm Fraction	0.005	g	55
>2mm Fraction	0.005	g	20
Analysed Material	0.1	%	73
Extraneous Material	0.1	%	27



Client Sample ID			SAP
Sample Matrix			Soil
Eurofins Sample No.			B24- Oc0031836
Date Sampled			Not Provided ^{I12}
Test/Reference	LOR	Unit	
Net Acidity (Excluding ANC)		•	
s-CRS Suite - Net Acidity - NASSG (Excluding ANC)	0.02	% S	0.25
CRS Suite - Net Acidity - NASSG (Excluding ANC)	10	mol H+/t	160
CRS Suite - Liming Rate - NASSG (Excluding ANC)	1	kg CaCO3/t	12
Actual Acidity (NLM-3.2)	•	•	
pH-KCL (NLM-3.1)	0.1	pH Units	8.7
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	< 2
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	< 0.003
Potential Acidity - Chromium Reducible Sulfur			
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	0.25
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	160
Extractable Sulfur			
Sulfur - KCl Extractable	0.005	% S	N/A
HCI Extractable Sulfur	0.005	% S	N/A
Retained Acidity (S-NAS)			
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	N/A
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	N/A
HCl Extractable Sulfur Correction Factor	1	factor	2.0
Acid Neutralising Capacity (ANCbt)			
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO3	6.4
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	2.0
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	1300
ANC Fineness Factor		factor	1.5
Net Acidity (Including ANC)			
s-CRS Suite - Net Acidity - NASSG (including ANC)	0.02	% S	< 0.02
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	< 10
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO3/t	< 1
Sample Properties		_	
% Moisture	1	%	53

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Report Number: 1148596-S



Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B6: BTEX/TRH/M8			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Brisbane	Oct 16, 2024	14 Days
BTEX	Brisbane	Oct 16, 2024	14 Days
	Diisbane	Oct 10, 2024	14 Days
- Method: USEPA SW846 8260 Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Oct 16, 2024	14 Days
•	Diisbane	Oct 10, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40 Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Oct 16, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40	Diisbane	Oct 10, 2024	14 Days
Metals M8	Sydney	Oct 16, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Oct 10, 2024	20 Days
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Oct 16, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)	Meibourne	Oct 10, 2024	14 Days
Organotins (as Sn) - ultra trace	Melbourne	Oct 16, 2024	14 Days
- Method: LTM-ORG-2400 Determination of organotins in solid & aqueous samples by LC-ICP-MS	Meibourne	Oct 10, 2024	14 Days
Total Organic Carbon	Melbourne	Oct 16, 2024	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil	Meibourne	Oct 10, 2024	20 Days
Particle Size by Sieve analysis*	Melbourne	Oct 16, 2024	28 Days
- Method: LTM-INO-4460 Particle Size Distribution (Sieving)	Weibourie	001 10, 2024	20 Days
Heavy Metals	Sydney	Oct 16, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Cydney	000 10, 2024	20 Days
Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P			
Ammonia (as N)	Melbourne	Oct 16, 2024	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Weibourne	000 10, 2024	20 Days
Nitrate & Nitrite (as N)	Melbourne	Oct 16, 2024	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Weibourne	000 10, 2024	20 Days
Nitrate (as N)	Melbourne	Oct 16, 2024	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Molocumo	000 10, 202 1	20 Dayo
Nitrite (as N)	Melbourne	Oct 16, 2024	28 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser		001 10, 202 1	20 20,0
Organic Nitrogen (as N)*	Melbourne	Oct 14, 2024	7 Days
- Method: APHA 4500 Organic Nitrogen (N)		, -	,
Total Kjeldahl Nitrogen (as N)	Melbourne	Oct 16, 2024	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA		•	,
Phosphorus	Melbourne	Oct 16, 2024	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon and Phosphorus by ICP-AES			•
Extraneous Material	Brisbane	Oct 16, 2024	6 Week
- Method: LTM-GEN-7050/7070			
Chromium Suite - NASSG (Excluding ANC)	Brisbane	Oct 16, 2024	6 Week
- Method: LTM-GEN-7070 Chromium Reducible Sulfur Suite			
% Moisture	Brisbane	Oct 14, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			



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003344 BUNDABERG SAP

Order No.:

Report #: 1148596 07 3831 6744

Phone: 07 3832 3627 Fax:

Received: Oct 11, 2024 2:00 PM Oct 18, 2024 Due:

Priority: 5 Dav

Contact Name: Freddie Pastorelli

Eurofins Analytical Services Manager: Emily ONeill

		Sa	mple Detail			Antimony	Low Level Metal Preparation fee*	Silver	Total Organic Carbon	Particle Size by Sieve analysis*	Moisture Set	Chromium Suite - NASSG (Excluding ANC)	Eurofins Suite B6: BTEX/TRH/M8	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P	Polycyclic Aromatic Hydrocarbons (Trace level)	Organotins (as Sn) - ultra trace
Melk	ourne Laborato	ory - NATA # 12	61 Site # 12	54					Х	Х				Х	Х	Х
Sydi	ney Laboratory	- NATA # 1261	Site # 18217			Х	Х	Х					Х			
Bris	bane Laborator	y - NATA # 126	1 Site # 2079	94 & 2780							Х	Х	Х			
Exte	rnal Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	SAP	Not Provided		Soil	B24-Oc0031836	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Test	Counts					1	1	1	1	1	1	1	1	1	1	1



Internal Quality Control Review and Glossary

General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request
- 2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- 3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- 4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- 7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- 8. Samples were analysed on an 'as received' basis.
- 9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
- 10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date: therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days

Units

mg/kg: milligrams per kilogram mg/L: milligrams per litre ppm: parts per million μg/L: micrograms per litre ppb: parts per billion %: Percentage

org/100 mL: Organisms per 100 millilitres NTU: Nephelometric Turbidity Units MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Colour: Pt-Co Units (CU) CFU: Colony Forming Unit

Terms

APHA American Public Health Association CEC Cation Exchange Capacity COC Chain of Custody

CP Client Parent - QC was performed on samples pertaining to this report CRM Certified Reference Material (ISO17034) - reported as percent recovery.

Dry Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis

Duplicate A second piece of analysis from the same sample and reported in the same units as the result to show comparison.

LOR Limit of Reporting.

LCS Laboratory Control Sample - reported as percent recovery.

Method Blank In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water NCP Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.

RPD Relative Percent Difference between two Duplicate pieces of analysis SPIKE Addition of the analyte to the sample and reported as percentage recovery

SRA Sample Receipt Advice

The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria Surr - Surrogate

Tributyltin oxide (bis-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. TRTO

TCI P Toxicity Characteristic Leaching Procedure TEQ Toxic Equivalency Quotient or Total Equivalence

QSM US Department of Defense Quality Systems Manual Version 6.0

US EPA United States Environmental Protection Agency

WA DWER Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50% Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 - 150%, VOC recoveries 50 - 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- 1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- 3. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- 4. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- 5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data



Quality Control Results

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank					
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	mg/kg	< 20	20	Pass	
TRH C10-C14	mg/kg	< 20	20	Pass	
TRH C15-C28	mg/kg	< 50	50	Pass	
TRH C29-C36	mg/kg	< 50	50	Pass	
Method Blank					
ВТЕХ					
Benzene	mg/kg	< 0.1	0.1	Pass	
Toluene	mg/kg	< 0.1	0.1	Pass	
Ethylbenzene	mg/kg	< 0.1	0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2	0.2	Pass	
o-Xylene	mg/kg	< 0.1	0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3	0.3	Pass	
Method Blank					
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene	mg/kg	< 0.5	0.5	Pass	
TRH C6-C10	mg/kg	< 20	20	Pass	
Method Blank		. = -		1 5.55	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	mg/kg	< 50	50	Pass	
TRH >C16-C34	mg/kg	< 100	100	Pass	
TRH >C34-C40	mg/kg	< 100	100	Pass	
Method Blank	ı mg/ng	1100	100	1 466	
Polycyclic Aromatic Hydrocarbons (Trace level)					
Acenaphthene	mg/kg	< 0.005	0.005	Pass	
Acenaphthylene	mg/kg	< 0.005	0.005	Pass	
Anthracene	mg/kg	< 0.005	0.005	Pass	
Benz(a)anthracene	mg/kg	< 0.005	0.005	Pass	
Benzo(a)pyrene - low level	mg/kg	< 0.005	0.005	Pass	
Benzo(b&i)fluoranthene	mg/kg	< 0.005	0.005	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.005	0.005	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.005	0.005	Pass	
Chrysene	mg/kg	< 0.005	0.005	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.005	0.005	Pass	
Fluoranthene	mg/kg	< 0.005	0.005	Pass	
Fluorene	mg/kg	< 0.005	0.005	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.005	0.005	Pass	
Naphthalene	mg/kg	< 0.005	0.005	Pass	
Phenanthrene	mg/kg	< 0.005	0.005	Pass	
Pyrene			0.005	Pass	
	mg/kg	< 0.005	0.005	Fass	
Method Blank Organotins (as Sn) - ultra trace		T T			
	ua/ka	-1	1	Pass	
Dibutyltin as Sn (ultra trace)	ug/kg	< 1			
Monobutyltin as Sn (ultra trace) Tributyltin as Sn (ultra trace)	ug/kg	<1	1	Pass	
	ug/kg	<1		Pass	
Method Blank Total Organia Carbon	0/	101	0.4	Pass	
Total Organic Carbon	%	< 0.1	0.1	Pass	
Method Blank					
Heavy Metals	N	10	10	Desir	
Antimony	mg/kg	< 10	10	Pass	
Arsenic	mg/kg	< 2	2	Pass	



Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	mg/kg	< 0.4	0.4	Pass	
Chromium	mg/kg	< 5	5	Pass	
Copper	mg/kg	< 5	5	Pass	
Lead	mg/kg	< 5	5	Pass	
Mercury	mg/kg	< 0.1	0.1	Pass	
Nickel	mg/kg	< 5	5	Pass	
Silver	mg/kg	< 1	1	Pass	
Zinc	mg/kg	< 5	5	Pass	
LCS - % Recovery					
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	%	84	70-130	Pass	
TRH C10-C14	%	89	70-130	Pass	
LCS - % Recovery					
ВТЕХ					
Benzene	%	97	70-130	Pass	
Toluene	%	93	70-130	Pass	
Ethylbenzene	%	98	70-130	Pass	
m&p-Xylenes	%	83	70-130	Pass	
Xylenes - Total*	%	81	70-130	Pass	
LCS - % Recovery				<u> </u>	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH C6-C10	%	80	70-130	Pass	
LCS - % Recovery		T T			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	%	89	70-130	Pass	
LCS - % Recovery		T T		T	
Polycyclic Aromatic Hydrocarbons (Trace level)					
Benzo(a)pyrene - low level	%	120	70-130	Pass	
LCS - % Recovery		T T		T	
Organotins (as Sn) - ultra trace	1				
Dibutyltin as Sn (ultra trace)	%	77	70-130	Pass	
Monobutyltin as Sn (ultra trace)	%	88	70-130	Pass	
Tributyltin as Sn (ultra trace)	%	73	70-130	Pass	
LCS - % Recovery	1	1		T	
Total Organic Carbon	%	95	70-130	Pass	
LCS - % Recovery				I	
Heavy Metals					
Antimony	%	97	80-120	Pass	
Arsenic	%	99	80-120	Pass	-
Cadmium	%	97	80-120	Pass	
Chromium	%	102	80-120	Pass	
Copper	%	102	80-120	Pass	-
Lead	%	101	80-120	Pass	-
Mercury	%	107	80-120	Pass	
Nickel	%	102	80-120	Pass	
Silver	%	88	80-120	Pass	
Zinc	%	100	80-120	Pass	
LCS - % Recovery					
Actual Acidity (NLM-3.2)	2:	+			
pH-KCL (NLM-3.1)	%	98	80-120	Pass	-
Titratable Actual Acidity (NLM-3.2)	%	96	80-120	Pass	
LCS - % Recovery					
Potential Acidity - Chromium Reducible Sulfur	1				
Chromium Reducible Sulfur (s-SCr) (NLM-2.1)	%	92	80-120	Pass	I



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons	- 1999 NEPM Fract	ions		Result 1					
TRH C6-C9	B24-Oc0021882	NCP	%	110			70-130	Pass	
TRH C10-C14	B24-Oc0025029	NCP	%	81			70-130	Pass	
Spike - % Recovery									
ВТЕХ				Result 1					
Benzene	B24-Oc0021882	NCP	%	107			70-130	Pass	
Toluene	B24-Oc0021882	NCP	%	107			70-130	Pass	
Ethylbenzene	B24-Oc0021882	NCP	%	116			70-130	Pass	
m&p-Xylenes	B24-Oc0021882	NCP	%	75			70-130	Pass	
o-Xylene	B24-Oc0021882	NCP	%	91			70-130	Pass	
Xylenes - Total*	B24-Oc0021882	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons	- 2013 NEPM Fract	ions		Result 1					
TRH C6-C10	B24-Oc0021882	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons	- 2013 NEPM Fract	ions		Result 1					
TRH >C10-C16	B24-Oc0025029	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organotins (as Sn) - ultra trace				Result 1					
Dibutyltin as Sn (ultra trace)	N24-Oc0037966	NCP	%	90			70-130	Pass	
Monobutyltin as Sn (ultra trace)	N24-Oc0037966	NCP	%	99			70-130	Pass	
Tributyltin as Sn (ultra trace)	N24-Oc0037966	NCP	%	82			70-130	Pass	
Spike - % Recovery				<u> </u>					
Heavy Metals				Result 1					
Antimony	S24-Oc0035490	NCP	%	85			75-125	Pass	
Arsenic	S24-Oc0035490	NCP	%	87			75-125	Pass	
Cadmium	S24-Oc0035490	NCP	%	92			75-125	Pass	
Chromium	S24-Oc0035490	NCP	%	93			75-125	Pass	
Copper	S24-Oc0035490	NCP	%	89			75-125	Pass	
Lead	S24-Oc0035490	NCP	%	89			75-125	Pass	
Mercury	S24-Oc0035490	NCP	%	99			75-125	Pass	
Nickel	S24-Oc0035490	NCP	%	91			75-125	Pass	
Silver	S24-Oc0035490	NCP	%	78			75-125	Pass	
Zinc	S24-Oc0035490	NCP	%	92			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons	- 1999 NEPM Fract	ions		Result 1	Result 2	RPD			
TRH C6-C9	B24-Oc0025786	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	B24-Oc0031161	NCP	mg/kg	29	29	<1	30%	Pass	
TRH C15-C28	B24-Oc0031161	NCP	mg/kg	240	270	16	30%	Pass	
TRH C29-C36	B24-Oc0031161	NCP	mg/kg	200	220	9.0	30%	Pass	
Duplicate									
ВТЕХ	_			Result 1	Result 2	RPD			
Benzene	B24-Oc0025786	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	B24-Oc0025786	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	B24-Oc0025786	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	B24-Oc0025786	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	B24-Oc0025786	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
	D04 0-0005700	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Xylenes - Total*	B24-Oc0025786								
Xylenes - Total* Duplicate	B24-UCUU25786								
				Result 1	Result 2	RPD			
Duplicate			mg/kg	Result 1 < 0.5	Result 2 < 0.5	RPD <1	30%	Pass	



-									
Duplicate									
Total Recoverable Hydrocarbons -				Result 1	Result 2	RPD		+	
TRH >C10-C16	B24-Oc0031161	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B24-Oc0031161	NCP	mg/kg	380	430	13	30%	Pass	
TRH >C34-C40	B24-Oc0031161	NCP	mg/kg	140	160	14	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons	(Trace level)			Result 1	Result 2	RPD			
Benzo(a)pyrene - low level	M24-Oc0032439	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organotins (as Sn) - ultra trace				Result 1	Result 2	RPD			
Dibutyltin as Sn (ultra trace)	N24-Oc0037980	NCP	ug/kg	< 1	< 1	<1	30%	Pass	
Monobutyltin as Sn (ultra trace)	N24-Oc0037980	NCP	ug/kg	< 1	< 1	<1	30%	Pass	
Tributyltin as Sn (ultra trace)	N24-Oc0037980	NCP	ug/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
•				Result 1	Result 2	RPD			
Total Kjeldahl Nitrogen (as N)	B24-Oc0032446	NCP	mg/kg	11000	9600	16	30%	Pass	
Total Organic Carbon	M24-Oc0036817	NCP	%	3.0	3.0	1.8	30%	Pass	
Phosphorus	S24-Oc0039527	NCP	mg/kg	250	260	4.0	30%	Pass	
Duplicate	JZ-7 JUUUJJJZ1	1401	,g/.kg	200	200	7.0	J 30 /0	1 433	
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-Oc0035529	NCP	mg/kg	2.5	3.5	32	30%	Fail	Q15
Cadmium	S24-Oc0035529	NCP		< 0.4	< 0.4	<u>52</u> <1	30%	Pass	QIS
		NCP	mg/kg			64		Fass	015
Chromium	\$24-Oc0035529		mg/kg	9.2	18		30%	1 1	Q15
Copper	S24-Oc0035529	NCP	mg/kg	< 5	< 5	<1	30%	Pass	0.45
Lead	S24-Oc0035529	NCP	mg/kg	16	22	31	30%	Fail	Q15
Mercury	S24-Oc0035529	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S24-Oc0035529	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Silver	S24-Oc0035489	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Zinc	S24-Oc0035529	NCP	mg/kg	7.0	7.1	1.0	30%	Pass	
Duplicate					T		T.		
Net Acidity (Excluding ANC)	Г			Result 1	Result 2	RPD			
s-CRS Suite - Net Acidity - NASSG	D04 0-000056	NOD	0/ 0	0.04	0.04	0.0	200/	_D	
(Excluding ANC)	B24-Oc0038356	NCP	% S	0.04	0.04	2.0	30%	Pass	
CRS Suite - Net Acidity - NASSG (Excluding ANC)	B24-Oc0038356	NCP	mol H+/t	24	24	2.0	20%	Pass	
CRS Suite - Liming Rate - NASSG	221 00000000	1101	1110111171			2.0	2070	1 400	
(Excluding ANC)	B24-Oc0038356	NCP	kg CaCO3/t	1.8	1.8	2.0	30%	Pass	
Duplicate									
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	B24-Oc0038356	NCP	pH Units	4.7	4.7	<1	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	B24-Oc0038356	NCP	mol H+/t	20	21	1.0	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	B24-Oc0038356	NCP	% pyrite S	0.030	0.030	1.0	30%	Pass	
Duplicate									
Potential Acidity - Chromium Red	ucible Sulfur			Result 1	Result 2	RPD			
Chromium Reducible Sulfur (s-SCr)									
(NLM-2.1)	B24-Oc0038356	NCP	% S	0.005	0.006	<1	20%	Pass	
Chromium Reducible Sulfur (a-SCr)									
(NLM-2.1)	B24-Oc0038356	NCP	mol H+/t	3.3	3.5	4.0	30%	Pass	
Duplicate				_					
Extractable Sulfur				Result 1	Result 2	RPD		+_ +	
Sulfur - KCl Extractable	B24-Oc0038356	NCP	% S	< 0.005	< 0.005	<1	30%	Pass	
HCI Extractable Sulfur	B24-Oc0038356	NCP	% S	N/A	N/A	N/A	20%	Pass	
Duplicate					,		1		
Retained Acidity (S-NAS)	· · · · · · · · · · · · · · · · · · ·			Result 1	Result 2	RPD			
Net Acid soluble sulfur (SNAS) NLM-4.1	B24-Oc0038356	NCP	% S	N/A	N/A	N/A	30%	Pass	
	DZ4-UUUU30330	NOP	70 S	IN/A	IN/A	IN/A	30%	rass	
					1				
Net Acid soluble sulfur (s-SNAS) NLM-4.1	B24-Oc0038356	NCP	% S	N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (s-SNAS)		NCP NCP	% S mol H+/t	N/A N/A	N/A N/A	N/A N/A	30%	Pass Pass	



Duplicate									
Acid Neutralising Capacity (ANCb	Result 1	Result 2	RPD						
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	B24-Oc0038356	NCP	% CaCO3	N/A	N/A	N/A	20%	Pass	
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2)	B24-Oc0038356	NCP	% S	N/A	N/A	N/A	30%	Pass	
ANC Fineness Factor	B24-Oc0038356	NCP	factor	1.5	1.5	<1	30%	Pass	
Duplicate									
Net Acidity (Including ANC)					Result 2	RPD			
s-CRS Suite - Net Acidity - NASSG (including ANC)	B24-Oc0038356	NCP	% S	0.04	0.04	2.0	30%	Pass	
CRS Suite - Net Acidity - NASSG (Including ANC)	B24-Oc0038356	NCP	mol H+/t	24	24	2.0	30%	Pass	
CRS Suite - Liming Rate - NASSG (Including ANC)	B24-Oc0038356	NCP	kg CaCO3/t	1.8	1.8	2.0	30%	Pass	
Duplicate									
Sample Properties					Result 2	RPD			
% Moisture	B24-Oc0031159	NCP	%	31	30	4.0	30%	Pass	



Comments

Sample Integrity

Custody Seals Intact (if used) N/A Attempt to Chill was evident Yes Sample correctly preserved Yes Appropriate sample containers have been used Yes Sample containers for volatile analysis received with minimal headspace Yes Samples received within HoldingTime N/A Some samples have been subcontracted No

Qualifier Codes/Comments

Code	Description

F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).

N01

Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.

N02

F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. N04

Q15 The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil' multiply 'reported results' x 'wet bulk density of soil in t/m3'

S01

Retained Acidity is Reported when the pHKCl is less than pH 4.5 S02

S03 Acid Neutralising Capacity is only required if the pHKCl if greater than or equal to pH 6.5

Acid Sulfate Soil Samples have a 24 hour holding time unless frozen or dried within that period S04

Authorised by:

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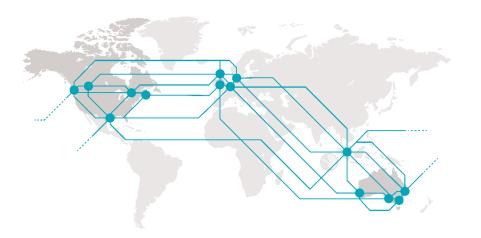
Final Report - this report replaces any previously issued Report

- Indicates Not Requested
- * Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Port of Bundaberg Maintenance Dredging 2024 SAP Implementation **OFFICIAL**



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