



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EN1001091	Page	: 1 of 5
Client	: WORLEY PARSONS - INFRASTRUCTURE MWE	Laboratory	: Environmental Division Newcastle
Contact	: MS KATIE NEWTON	Contact	: Peter Keyte
Address	:	Address	: 5 Rosegum Road Warabrook NSW Australia 2304
E-mail	: knewton@worleyparsons.com	E-mail	: peter.keyte@als.com.au
Telephone	: +61 02 4907 5324	Telephone	: +61-2-4968 9433
Facsimile	: ----	Facsimile	: +61-2-4968 0349
Project	: 301015-01696 05	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 11-MAY-2010
C-O-C number	: ----	Issue Date	: 20-MAY-2010
Sampler	: K. NEWTON	No. of samples received	: 13
Site	: ----	No. of samples analysed	: 13
Quote number	: EN/034/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

This document is issued in
accordance with NATA
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Accredited for compliance with
ISO/IEC 17025.

Signatories

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

Signatories	Position	Accreditation Category
Dianne Blane	Laboratory Supervisor	Newcastle

Environmental Division Newcastle

Part of the **ALS Laboratory Group**

5 Rosegum Road Warabrook NSW Australia 2304
Tel. +61-2-4968 9433 Fax. +61-2-4968 0349 www.alsglobal.com

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

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



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				BG1 - PSA	BG2 - PSA	BG3 - PSA	BG4 - PSA	SB1 - PSA
				04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00
Compound	CAS Number	LOR	Unit	EN1001091-001	EN1001091-002	EN1001091-003	EN1001091-004	EN1001091-005
EA150: Particle Sizing								
+75µm	----	1	%	9	21	32	21	5
+150µm	----	1	%	7	17	26	16	2
+300µm	----	1	%	4	8	13	7	<1
+425µm	----	1	%	3	4	5	4	<1
+600µm	----	1	%	1	2	2	2	<1
+1180µm	----	1	%	<1	1	<1	1	<1
+2.36mm	----	1	%	<1	<1	<1	<1	<1
+4.75mm	----	1	%	<1	<1	<1	<1	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	48	36	32	33	21
Silt (2-60 µm)	----	1	%	41	41	34	44	63
Sand (0.06-2.00 mm)	----	1	%	10	23	34	23	16
Gravel (>2mm)	----	1	%	1	<1	<1	<1	<1
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				SB2 - PSA	SB3 - PSA	SB4 - PSA	BB1 - PSA	BB2 - PSA
				04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00
Compound	CAS Number	LOR	Unit	EN1001091-006	EN1001091-007	EN1001091-008	EN1001091-009	EN1001091-010
EA150: Particle Sizing								
+75µm	----	1	%	4	74	46	38	4
+150µm	----	1	%	2	70	40	28	2
+300µm	----	1	%	1	43	20	20	2
+425µm	----	1	%	<1	22	7	16	1
+600µm	----	1	%	<1	6	2	12	<1
+1180µm	----	1	%	<1	<1	<1	8	<1
+2.36mm	----	1	%	<1	<1	<1	5	<1
+4.75mm	----	1	%	<1	<1	<1	2	<1
+9.5mm	----	1	%	<1	<1	<1	<1	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	30	10	29	29	22
Silt (2-60 µm)	----	1	%	60	14	23	28	69
Sand (0.06-2.00 mm)	----	1	%	10	76	47	38	9
Gravel (>2mm)	----	1	%	<1	<1	1	5	<1
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				BB3 - PSA	BB4 - PSA	QA - BG2		
				04-MAY-2010 15:00	04-MAY-2010 15:00	04-MAY-2010 15:00	----	----
Compound	CAS Number	LOR	Unit	EN1001091-011	EN1001091-012	EN1001091-013	----	----
EA150: Particle Sizing								
+75µm	----	1	%	19	41	21	----	----
+150µm	----	1	%	12	35	16	----	----
+300µm	----	1	%	5	18	9	----	----
+425µm	----	1	%	2	6	6	----	----
+600µm	----	1	%	1	2	4	----	----
+1180µm	----	1	%	<1	<1	3	----	----
+2.36mm	----	1	%	<1	<1	3	----	----
+4.75mm	----	1	%	<1	<1	2	----	----
+9.5mm	----	1	%	<1	<1	<1	----	----
+19.0mm	----	1	%	<1	<1	<1	----	----
+37.5mm	----	1	%	<1	<1	<1	----	----
+75.0mm	----	1	%	<1	<1	<1	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	39	14	40	----	----
Silt (2-60 µm)	----	1	%	42	44	35	----	----
Sand (0.06-2.00 mm)	----	1	%	19	42	22	----	----
Gravel (>2mm)	----	1	%	<1	<1	3	----	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	----	----



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EN1001091	Page	: 1 of 5
Client	: WORLEY PARSONS - INFRASTRUCTURE MWE	Laboratory	: Environmental Division Newcastle
Contact	: MS KATIE NEWTON	Contact	: Peter Keyte
Address	:	Address	: 5 Rosegum Road Warabrook NSW Australia 2304
E-mail	: knewton@worleyparsons.com	E-mail	: peter.keyte@als.com.au
Telephone	: +61 02 4907 5324	Telephone	: +61-2-4968 9433
Facsimile	: ----	Facsimile	: +61-2-4968 0349
Project	: 301015-01696 05	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 11-MAY-2010
C-O-C number	: ----	Issue Date	: 20-MAY-2010
Sampler	: K. NEWTON	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13
Quote number	: EN/034/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

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



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Dianne Blane	Laboratory Supervisor	Newcastle

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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



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%.

								No Limit
--	--	--	--	--	--	--	--	----------

- No Laboratory Duplicate (DUP) Results are required to be reported.



Method Blank (MB) and Laboratory Control Spike (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.

- **No Method Blank (MB) or Laboratory Control Spike (SCS) Results are required to be reported.**



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.

- **No Matrix Spike (MS) Results are required to be reported.**



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EN1001091	Page	: 1 of 5
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Contact	: MS KATIE NEWTON	Contact	: Peter Keyte
Address	:	Address	: 5 Rosegum Road Warabrook NSW Australia 2304
E-mail	: knewton@worleyparsons.com	E-mail	: peter.keyte@als.com.au
Telephone	: +61 02 4907 5324	Telephone	: +61-2-4968 9433
Facsimile	: ----	Facsimile	: +61-2-4968 0349
Project	: 301015-01696 05	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 11-MAY-2010
C-O-C number	: ----	Issue Date	: 20-MAY-2010
Sampler	: K. NEWTON	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13
Quote number	: EN/034/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

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5 Rosegum Road Warabrook NSW Australia 2304
Tel. +61-2-4968 9433 Fax. +61-2-4968 0349 www.alsglobal.com

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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA150: Particle Sizing								
Snap Lock Bag		04-MAY-2010	---	---	----	19-MAY-2010	31-OCT-2010	✔
BG1 - PSA,	BG2 - PSA,							
BG3 - PSA,	BG4 - PSA,							
SB1 - PSA,	SB2 - PSA,							
SB3 - PSA,	SB4 - PSA,							
BB1 - PSA,	BB2 - PSA,							
BB3 - PSA,	BB4 - PSA,							
QA - BG2								
EA150: Soil Classification based on Particle Size								
Snap Lock Bag		04-MAY-2010	---	---	----	19-MAY-2010	31-OCT-2010	✔
BG1 - PSA,	BG2 - PSA,							
BG3 - PSA,	BG4 - PSA,							
SB1 - PSA,	SB2 - PSA,							
SB3 - PSA,	SB4 - PSA,							
BB1 - PSA,	BB2 - PSA,							
BB3 - PSA,	BB4 - PSA,							
QA - BG2								



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(where) 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:

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	



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
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 1995
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For all matrices, no Matrix Spike outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.



WorleyParsons

resources & energy

EcoNomics

LEND LEASE

BARANGAROO STAGE 1

BARANGAROO CONCEPT PLAN AMENDMENT (MP06_0162 MOD4) - MARINE ECOLOGY, WATER
QUALITY AND CONTAMINATED SEDIMENT IMPACT ASSESSMENT

Appendix 4 – Marine Infauna Data

Phylum	Subphylum	Class	Subclass	Order
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Aciculata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Canapalpata
Annelida	undifferentiated	Polychaeta	Palpata	Polychaeta
Annelida	undifferentiated	Polychaeta	Palpata	Polychaeta
Annelida	undifferentiated	Polychaeta	Palpata	Polychaeta
Annelida	undifferentiated	Polychaeta	Scolecida	Scolecida
Annelida	undifferentiated	Polychaeta	Scolecida	Scolecida
Annelida	undifferentiated	Polychaeta	Scolecida	Scolecida
Annelida	undifferentiated	Polychaeta	Scolecida	Scolecida
Arthropoda	Chelicerata	Pycnogonida	Pantopoda	undifferentiated
Arthropoda	Crustacea	Copepoda	undifferentiated	undifferentiated
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Amphipoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Decapoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Isopoda
Arthropoda	Crustacea	Malacostraca	Eumalacostraca	Mysida
Arthropoda	Crustacea	Malacostraca	undifferentiated	Tanaidacea
Arthropoda	Crustacea	Ostracoda	undifferentiated	undifferentiated
Arthropoda	Crustacea	undifferentiated	undifferentiated	undifferentiated
Arthropoda	Hexapoda	Insecta	Ptilota	Diptera
Bryazoa	undifferentiated	Gymnolaemata	undetermined	Cheilostomata
Bryazoa	undifferentiated	Gymnolaemata	undetermined	Cheilostomata
Chordata	Tunicata	Ascidiacea	undifferentiated	undifferentiated
Cnidaria	undifferentiated	Anthozoa	undifferentiated	undifferentiated
Echinodermata	Asterozoa	Stelleroidea	Ophiuroidea	Ophiurida
Mollusca	Diasoma	Bivalvia	Heterodonta	Veneroida
Mollusca	Diasoma	Bivalvia	Heterodonta	Veneroida
Mollusca	Diasoma	Bivalvia	Heterodonta	Veneroida
Mollusca	Diasoma	Bivalvia	Heterodonta	Veneroida
Mollusca	Diasoma	Bivalvia	Heterodonta	Veneroida
Mollusca	Diasoma	Bivalvia	Heterodonta	Veneroida
Mollusca	undifferentiated	Gastropoda	Heterobranchia	Cephalaspidea
Nematoda	undifferentiated	undifferentiated	undifferentiated	undifferentiated
Nemertea	Nemertea	Enopla	undifferentiated	Hoplonemertea
Sipuncula	undifferentiated	Sipunculidea	undifferentiated	undifferentiated
Platyhelminthes	undifferentiated	Trematoda	Digenia	undifferentiated

Suborder	Family	Common Name	BB1-1	BB1-2
Eunicida	Cirratulidae	Spagetti worms	2	3
Eunicida	Eunicidae	Eunicid worms	1	
Eunicida	Lumbrineridae	Lumbrinerid worms	1	
Phyllodocida	Glyceridae	Bloodworms		
Phyllodocida	Nephtyidae	Nephtyid worms		
Phyllodocida	Nereididae	Nereidid worms	1	
Phyllodocida	Phyllodocidae	Paddle worms	1	
Phyllodocida	Pilargidae	Pilargid worms		
Phyllodocida	Syllidae	Syllid worms		1
Sabellida	Oweniidae	Oweniid worms		
Sabellida	Sabellidae	Feather-duster worms		
Spionida	Sigalionidae	Sigalionid worms		
Spionida	Spionidae	Spionid worms	1	
Terebellida	Terebellidae	Terebellid worms		
Terebellida	Trichobranchidae	Trichobranchid worms		
Phyllodocida	Hesionidae	Hesionid worms		
Phyllodocida	Lacydoniidae	Lacydoniid worms		
Spionida	Chaetopteridae	Chaetopterid worms	2	
Scolecida	Capitellidae	Capitellid worms		3
Scolecida	Maldanidae	Bamboo Worms		
Scolecida	Opheliidae	Opheliid worms		
Scolecida	Orbiniidae	Rag worms		
undifferentiated	Pantopoda sp.a	Sea spiders		
undifferentiated	Copepoda spp	Copepods		
so: Gammaridea	Caprellidae	Caprellid amphipods		
so: Gammaridea	Corophiidae	Corophid amphipods		
so: Gammaridea	Gammaridea spp	Gammarid amphipods		1
Callianassoidea	Callianassidae	Yabbys		
so: Pleocyemata	Alpheidae	Snapping shrimp		
so: Pleocyemata	Grapsidae	Grapsid crabs		1
so: Pleocyemata	Porcellanidae	Porcellin crabs		
so: Pleocyemata	Xanthidae	Mud crabs		
undifferentiated	Brachyura sp.a	Brachyuran crabs		
undifferentiated	Caridean sp.a	Caridean shrimps		
so: Anthuridea	Anthuridae	Isopods		
undifferentiated	Mysidae	Opossum shrimps		
undifferentiated	Apseudidae	Tanaids		
undifferentiated	Ostracoda sp. a	Seed shrimps	1	
undifferentiated	Invertebrate sp.	unidentified invertebrate		
Nematocera	Chironomidae	Non-biting midges		
undifferentiated	Cheilostomata spp	Lace animals (encrusting)		
undifferentiated	Cheilostomata spp	Lace animals (branching)		
undifferentiated	Ascidacea sp.a	Seasquirts		1
undifferentiated	Cnidarian sp.a	Cnidarian polyp		
undifferentiated	Ophurida spp.	Brittle stars		
Tellinoidea	Mactridae	Trough clams		
Tellinoidea	Psammobiidae (Gari le	Sunset shells		
Tellinoidea	Psammobiidae frailis	Tellinoid clams		
undifferentiated	Veneridae	Venus clams		
undifferentiated	Bivalvia sp.a	Marine clams		
Veneroida	Veneroida sp.	Venerid clam		
sf: Philioidea	Philinidae	Marine slugs		1
undifferentiated	Nematod spp	Nematodes		
undifferentiated	Hoplonemertea spp.	Ribbon worms		1
undifferentiated	Sipuncula sp.a	Peanut worms		
undifferentiated	Digenia sp.	Parasitic flatworms		
	Total Abundance		10	12
	Richness		8	8

BB1-3	BB2-1	BB2-2	BBS-3	BB3-1	BB3-2	BB3-3
1						
1					4	
2						
1	1	3	2	5		1
3			1			
6				2		
6		1		1		
	2	3	1	2		1
2					2	
					1	
			1			
					1	
2						
25	3	7	5	10	8	2
10	2	3	4	4	4	2

[illegible]

[illegible]

BG4-3	SB1-1	SB1-2	SB1-3	SB2-1	SB2-2	No sample
-------	-------	-------	-------	-------	-------	-----------

1	5	4	4	1 1	1	
---	---	---	---	--------	---	--

	3	1 2			1	
--	---	--------	--	--	---	--

			1			
1						

2	8	7	5	2	2	0
2	2	3	2	2	2	0

SB3-1	SB3-2	SB3-3	SB4-1	SB4-2	SB4-3	Total
	1				1	10
		1				1
						4
						1
						3
						6
				1		1
		1				6
						5
						3
			2	1		3
3		1	1			38
						14
						12
						1
			7	3	1	33
11	4	5	8	3	2	88
		1				20
				1		2
						3
						2
9	11	7	8	2	1	60
						2
						1
						1
						1
	1					1
						2
						1
					1	1
				1		1
	1					3
1	4	1		1		1
					1	18
						1
						2
24	22	17	26	13	7	354
4	6	7	5	8	6	39



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BARANGAROO STAGE 1

**BARANGAROO CONCEPT PLAN AMENDMENT (MP06_0162 MOD4) - MARINE ECOLOGY, WATER
QUALITY AND CONTAMINATED SEDIMENT IMPACT ASSESSMENT**

Appendix 2 – Threatened Species Searches



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QUALITY AND CONTAMINATED SEDIMENT IMPACT ASSESSMENT

Appendix 3 – Sediment Data



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Appendix 4 – Marine Infauna Data